UN

UNITED
NATIONS

TD

United Nations Conference on Trade and Development

Distr.
GENERAL

TD/B/CN.1/IRON ORE/18
31 July 1995

Original: ENGLISH

TRADE AND DEVELOPMENT BOARD
Standing Committee on Commodities
Intergovernmental Group of Experts
on Iron Ore
Fourth session
Geneva, 23 October 1995
Item 4 of the provisional agenda

REVIEW OF THE CURRENT SITUATION AND OUTLOOK FOR IRON ORE - 1995*/

Report by the UNCTAD secretariat

*/This report covers developments in the world iron ore market in 1994 and in the first half of 1995. The main purpose of the report is to stimulate an exchange of views on the current situation and outlook for the international iron ore market. Detailed statistics appear in the document entitled "Iron Ore statistics 1987-1994" (TD/B/CN.1/IRON ORE/17) prepared by the UNCTAD secretariat.

GE.95-52642

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I. OVERVIEW AND SUMMARY

1. In 1994 world iron ore trade reached an all-time record level. Led by higher levels of industrial output, the strong upsurge in global steel demand boosted the world iron ore market. The pick-up of steel consumption in developed economies and the continuing rise of steel output in the fast developing regions, led to an increase of nearly 7.5% in the volume of world iron ore trade which reached 430 Mt last year. As a result, iron ore remains the most traded non-energy mineral commodity in terms of value and volume, and regained its top position in the world dry bulk commodity market being largely responsible for one of the sharpest increases of freight rates over the last decade. Australia and Brazil continue to dominate the world iron ore scene, their combined market share now close to 60% of world total.

2. Paradoxically however, despite an extremely tight supply situation, iron ore prices fell sharply by 9.5% in 1994 following a downward trend for the third consecutive year, and making it together with manganese, one of the few major commodities not benefiting from the improvement of commodities prices in 1994. Total iron ore transactions amounted to US$ 8 billion. Iron ore prices started recovering in 1995. However, as prices are quoted in United States dollars, the combination of low prices and a weak United States dollar continue to erode part of exporters' gains, especially in countries where national currencies have been over-valued. In the present context, pricing iron ore in United States dollars seems no longer pertinent, since it distorts the market and brings more instability to the iron ore industry.

3. Noteworthy this time, was that the upswing signs for iron ore demand came from industrialized countries, in particular the European Union and the United States. As it was only in 1994 that OECD countries emerged from recession, the strength of economic recovery strongly influenced world steel consumption. This peak has shown that steel remains a key sector for the world economy, even in the most developed countries. Undoubtedly, the indirect exports of steel in products such as automobiles and machinery retains a leading role in their trade balance.

4. Furthermore, even if economic growth in China slowed somewhat in 1994. the sustained expansion of the Chinese economy continues to have a positive impact on the level of steel output, generating a significant increase in global demand for iron ore. The ever-growing level of steel demand in the dynamic Asian economies as well as in Latin America and Middle East also had greatly contributed to the substantial growth of iron ore trade in 1994. However in the CIS, iron ore mining and consumption continued to fall drastically.

5. In line with the secretariat's expectations[1], the world iron ore market in 1995 has been buoyant. Globally, metals demand continues to rise, tightening ore supplies. Lower inflation and interest rates are stimulating capital spending and activating further growth in steel consuming sectors. During the first half of the year, world steel output rose sharply causing a sizeable increase of iron ore shipments. This strong market condition is unlikely to be reversed during the remaining of 1995. The optimism continues for 1996, since global demand and prices for steel and iron ore products are likely to rise further.

II. FACTORS INFLUENCING IRON ORE DEMAND

6. Despite the sharp drop in iron ore consumption in the CIS, world demand for iron ore progressed more rapidly than expected in 1994. Already by the middle of the year, there were clear signs that declines in Japanese demand were lower than anticipated, and the strong recovery particularly in the EU and the United States provoked the upturn in iron ore consumption and imports. Stock rebuilding was another key factor contributing to the recent booming of the iron ore market.

Table 1
World apparent consumption of iron ore
(million tons)

Regions or Countries	1987	1989	1992	1993	1994	1994/93 change %
Developed countries	352.5	374.6	342.9	323.5	348.9	7.9
of which:						
EU	131.9	149.0	126.3	114.3	130.7	14.4
Japan	112.3	128.0	113.7	114.5	116.1	1.4
United States	59.4	63.1	62.4	64.6	71.0	9.9
Developing Countries	153.5	165.1	180.7	177.9	192.6	8.3
of which:						
Asia	68.5	75.2	94.8	100.8	103.0	2.3
Latin America	56.4	59.6	62.3	60.0	70.0	16.7
Africa	21.6	23.6	21.4	16.4	19.4	18.7
Eastern Europe	269.3	257.1	174.5	154.5	136.7	-11.5
of which:						
CIS	205.5	201.4	148.0	124.7	104.0	-16.6
Socialist Asia						
China	156.1	174.6	221.1	267.7	276.3	3.2
World Total	**931.5**	**971.4**	**919.2**	**923.5**	**954.6**	**3.4**

Source : UNCTAD secretariat

7. In addition, as prices for prime grade ferrous scrap remained high in 1994, demand for alternative primary iron products continued strong pushing up ores consumption. As a result, shortages of high quality pellets and lumps occurred and supplies were sold-out. Not only large volumes of these products were sold to DRI (direct-reduced iron) plants, but also integrated steel producers took advantage of the low price of these direct-charge ores. Even in the case of fines for which new supply capacity came on stream, the market also became tight, mainly in response to the upswing in deliveries of imported ores to Western European countries.

8. The main features which influenced the recent upswing in world demand and iron ore seaborne trade in 1994 were:

A. Developments in the steel market

9. The strength of steel recovery in western economies, almost offset the impact of 20% drop of steel output in the CIS republics. Global steel production totalled 723 Mt in 1994, a marginal decline as compared to 1993. The need to replenish inventories of steel products, also accounted for the generalized upturn in steel demand.

10. International steel trade rose significantly in 1994 and now accounts for over 20% of total production of finished products. Steel prices went up sharply in 1994 and have remained high so far in 1995. Excluding the CIS, the capacity utilization of the world steel industry improved perceptibly and the financial position of steel companies seems healthy. Privatizations and investments in modernization of steel plants continued worldwide, with a negative impact in the level of employment in the steel industry. The restructuring of the steel industry in developed market-economy countries caused an additional reduction of over 54 thousand jobs in 1994[2].

11. In the OECD area, after three years of decline, steel demand rose by 7% in 1994. The investment-led economic recovery had a positive impact on private consumption, inducing a rise of 6% in industrial production. Accelerated activities in most steel-consuming sectors boosted demand for imported ores.

12. In the European Union the high level of investments accelerated economic growth, particularly in Germany and France where the performance of major steel consuming industries notably the automobile, electrical domestic appliances and mechanical engineering, were excellent. As total steel consumption inside the EU

iron ore imports rose by 16%. During the first half of 1995, already with 15 member States, iron ore consumption is rising further following the sharp increase of EU's crude steel production.

Table 2
Steel production by major producing countries, 1987-1994
(million tons)

Country	1987	1989	1992	1993	1994	1994/1993 Change %
1. Japan	98.5	107.9	98.1	99.6	98.3	-1.3
2. China	56.3	61.4	80.0	89.5	91.5	2.3
3. United States	80.9	88.9	84.3	88.8	88.6	-0.3
4. Former USSR	161.9	160.1	117.9	97.8	77.7	-20.5
5. Germany*	36.3	41.1	39.7	37.6	40.8	8.5
6. Rep.of Korea	16.8	21.9	28.1	33.0	33.7	2.2
7. Italy	22.8	25.2	24.9	25.7	26.1	1.3
8. Brazil	22.2	25.0	23.9	25.2	25.7	2.1
9. India	13.1	14.6	18.1	18.1	18.2	0.4
10. France	17.4	18.7	18.0	17.1	18.0	5.4
World Total	**735.2**	**784.8**	**721.4**	**729.4**	**723.4**	**-0.8**

Source: UNCTAD and the International Iron & Steel Institute (IISI).
* From 1991 onwards, unified territory.

13. In the United States, the robust 4% GDP growth in 1994 stimulated domestic demand. Consumption of steel and its related commodities rose sharply. However, due to capacity constrains much of the surge in North American demand had to be met by rising imports of both steel (30 Mt) and iron ore (17 Mt). This greatly contributed to the growth in world trade in 1994 but it will not happen again in 1995. Crude steel output (+7% during Jan-June 1995) and iron ore consumption continue to grow in the United States. On the one hand, the rise of interest rates have not stalled the American economy; on the other, the weak dollar led to a rebound of the United States direct and indirect steel exports, boosting iron ore domestic demand.

14. In Japan, the recovery supported by the private housing sector was anaemic in 1994. A GDP growth of only 0.6% combined with the strong yen has not only slowed export growth but also discouraged investments. Nevertheless, Japan remains the world's largest iron ore importer and also the biggest steel producer. In 1994 while Japanese steel output was 1% lower, its demand for imported ores amounted to 116 Mt being 1.5% higher than in 1993 thanks to the increase of Japanese pig iron production and exports. As recovery lagged, a significant upturn in Japanese domestic demand happened only in early 1995 and

also reflected the reconstruction works after the damages caused by the Habshim's earthquake. During the January-June period, Japanese steel output climbed by 10.5% and iron ore imports increased by 7.5%. However, as total demand in the manufacturing industry will possibly drop and steel inventories had to be adjusted, it seems unlikely that the high levels of crude steel output would be maintained during the second half of 1995.

15. In the fast-growing economies of developing regions, the steady growth in steel and iron ore demand continued. China was the world's largest consumer of steel and iron ore in 1994. Although tighter monetary policy attempted to reduce inflationary pressures and cool the overheated Chinese economy, the 12% GDP growth boosted steel and iron ore demand. In spite of the fact that some major investment projects may be delayed, owing to credit financing difficulties, the steel sector remains bullish. While the very high levels of steel imports of 1993-94 are likely to be sharply reduced, output and capacity of the Chinese steel industry are expected to continue to grow. Chinese iron ore demand, which already in 1994 exceeded 275 Mt, is rising further. It should be pointed out that while domestic production of low-grade ores increased 2%, iron ore imports jumped by 13% in 1994.

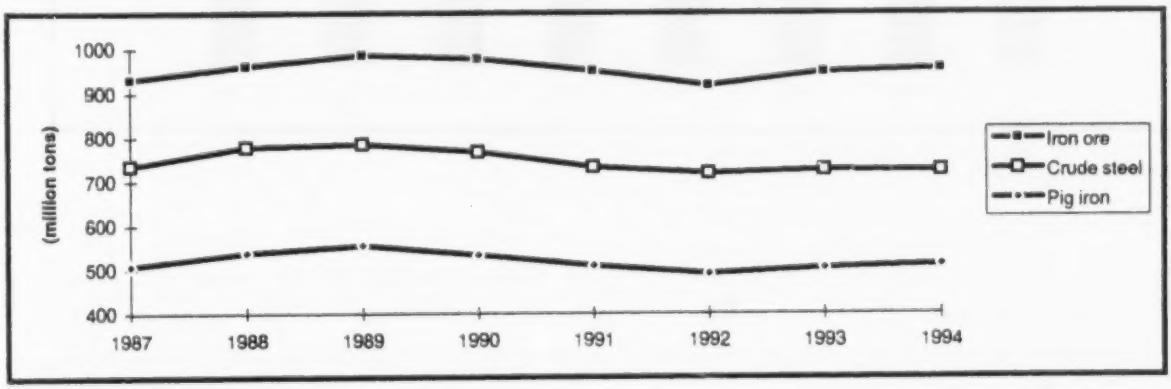
16. In the Republic of Korea, steel consumption soared by over 20% in 1994 thanks to the buoyant performance of the automobile and shipbuilding industry. Steel output and imports of steel products accordingly rose, and increases in steelmaking capacity are planned. However, as capacity expansion is expected to be mostly EAF-based, the Korean annual demand for imported ores is likely to level-off at the 35 Mt level. However, Korean iron ore imports slightly decreased last year in consequence of ironmaking capacity constraints. India is also among the top ten steel producing countries. Since the early 90s, following liberalization measures in its economy, the Indian steel industry gained a new impetus and its annual crude steel output now exceeds 18 Mt. The expansion of the steel sector is underway, pushing up the demand for domestically produced ores.

17. In Latin America, the combined effect of higher economic growth, lower inflation rates and trade liberalization policies boosted internal demand of steel-consuming sectors. In order to meet the requirements of 12% rise in steel consumption, not only was steel output 5% higher in Latin America but imports of steel products also rose substantially in 1994, mainly to satisfy the upswing of the Brazilian market. The strongest growth in steelmaking and iron ore demand took place in Brazil, Mexico and Argentina. However, the impact of the Mexican peso crisis late in 1994, together with and other factors, brought uncertainties to the Latin American economic outlook and may affect regional demand for steel and iron ore in the short-term.

18. In the countries of Eastern Europe, the economic situation is improving and levels of steel production and consumption were substantially higher in 1994, particularly in Poland, the Czech Republic, Romania and Hungary. In some of these countries, given the boom of the construction and engineering sectors, steel imports rose considerably because demand could not be met by the already higher local output. As local production of iron ore is marginal, this led to a rise of 7% on regional demand for imported ores in 1994.

19. Conversely, in the CIS the macroeconomic situation turned out to be generally worse than expected in 1994. Industrial output fell sharply and steel production further dropped nearly 20% by comparison with 1993. Together, Russia and Ukraine produce about 95% of CIS' total steel output, using their own iron ores which levels of output have been severely cut-down by nearly 100 Mt since 1990.

Chart I : World production of crude steel, pig iron and iron ore



Source: UNCTAD secretariat

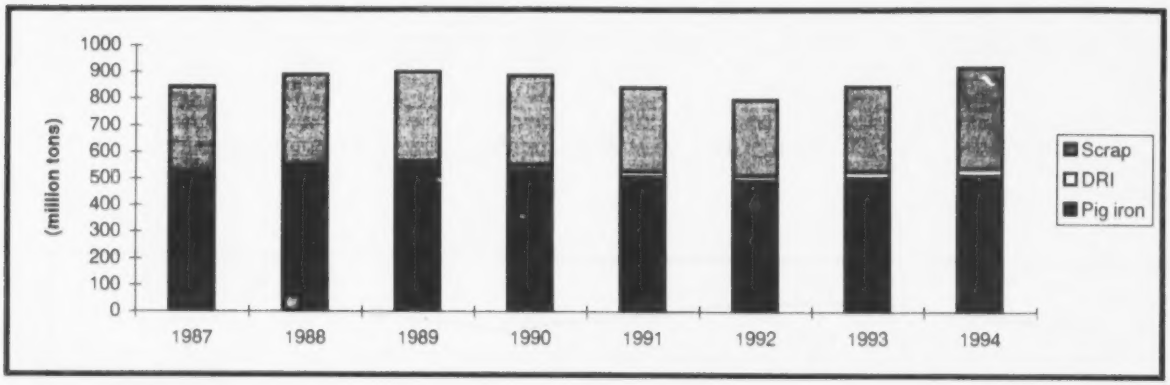
B. Ferrous metallics market

20 The rebound of the steel market aggravated the situation of metallics markets in 1994. Given the high utilization rates of the world steel industry throughout the year, whether integrated steelworks or minimills, metallics supply conditions were extremely tight for both primary and secondary iron products. This led to growing concerns about a possible global shortage of good quality metallics coupled with soaring prices. Moreover, with the ongoing transformation of the world steel industry driven by the expansion of the new thin-slab

minimills[3], strategic options based on the long-term supply/demand balance of metallics have been more carefully examined.

21. As scrap prices continued to escalate, the competition between iron ore-based and scrap-based routes for ironmaking has become more acute. At the same time R&D has speeded-up to make the new ironmaking technologies operational as soon as possible (see para.77 below).

Chart II - World demand for ferrous metallics



Source: UNCTAD secretariat

22. **Pig iron:** As over 60% of world crude steel production is made via blast furnaces (BOF/OH), pig iron remains the most used metallic for steelmaking. Noticeable is the growing use of pig iron in electric furnaces. In 1994, about 510 Mt of pig iron were used by the steel industry worldwide. However, most integrated steel producers were unable to increase pig iron output quickly in response to demand upturn, owing to capacity constraints and coke supply limitations.

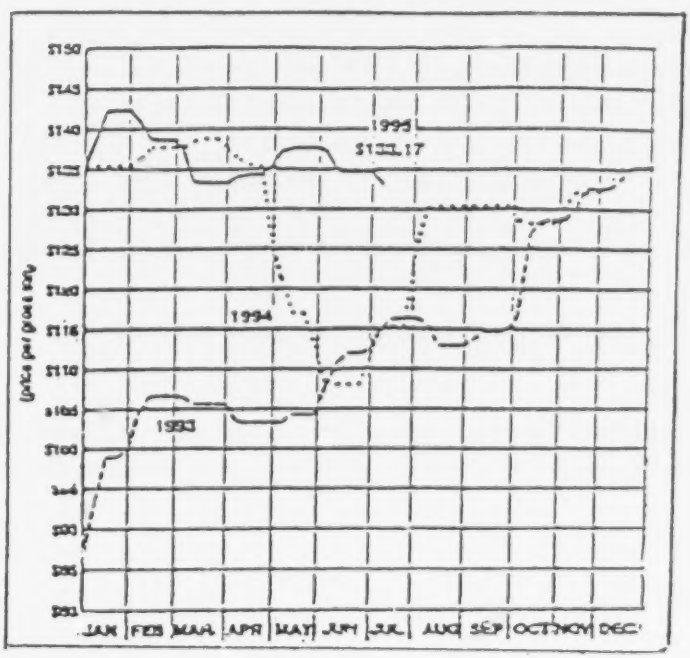
23. In view of its competitive price vis-a-vis ferrous scrap, world trade of pig iron has been growing. In 1994, total supplies to world markets may have reached 10 Mt, although the limited availability of cold pig iron continued to hinder trade. Major exporters such as Brazil, China, Russia and Ukraine exported higher volumes but could not keep pace with strong demand. Environmental regulations and trade barriers have been discouraging increases in supply capabilities. Pollution controls led to the closure of several plants and constrained capacity additions in recent years.

24. **Direct Reduced Iron (DRI)** : In the meantime, world capacity for DRI continued to expand rapidly. Although, DRI accounts for less than 5% of world current demand for metallics, demand for DRI is rising sharply. World DRI output rose by 15%: a new record of over 28 Mt was produced in 1994, compared to 9 Mt ten years before. This explains the recent tight market for pellets, since DR-pellets account for about 80% of total DR feedstock. Moreover, nearly 1 Mt of DRI was also consumed in blast furnaces and foundries last year[4].

25. Noteworthy is the increasing volume of DRI/HBI going to world markets; nearly 6.5 Mt were traded last year. Some newly commissioned DRI plants are now export-oriented. New DRI plants started up in Brazil, India, Indonesia, Iran and Trinidad and Tobago, while in the United States DRI capacity will be more than quintupled in the near future with the addition of two facilities[5]. Moreover, as over 90% of DRI capacity is gas-based, environmental pressure to reduce cokemaking capacity has been favouring the expansion of cleaner DR processes to produce virgin iron units.

26. **Ferrous scrap** : The only substitute for primary iron is secondary iron. Thus, the market for primary iron is sensitive not only to supply/demand fundamentals but also to scrap price fluctuations. Since 1993, strong demand has helped to maintain prices for higher grades at soaring levels, as is shown in the chart below. The downturn of May-July 1994 was short-lived, and since then a new peak was seen in early 1995. Nevertheless, world trade of ferrous scrap rose considerably over the last two years. According to our estimates, total exports of ferrous scrap has exceeded 48 Mt in 1994.

Chart III - Evolution of ferrous scrap prices, 1993-1995



Source: American Metal Market
Weekly scrap price, composite No.1

27. Even if the reservoir of obsolete scrap continues to grow in industrialized countries, factors such as stricter specifications, irregularity of arisings and high processing and transportation costs have been limiting world supply of top quality grades. In 1994, the very high capacity utilization of the steel industry, particularly in the United States - the world's largest scrap exporter, added more pressure on the world scrap market. Given the firm domestic demand, the United States scrap exports were reduced by nearly 10%. As a result, demand for other metallics increased considerably. This, greatly contributed to push up iron ore trade to peak levels.

C. Iron ore stocks

28. Stock-rebuilding strongly influenced the recent boom of the world iron ore market. As already reported, at the end of 1993 the level of iron ore stocks fell sharply as a result of the sudden upswing in steel demand late in the year. Most producers and consumers reported a sizeable reduction in inventories. In the European Union, for instance, total stocks were 13.7 Mt in 1993 compared to 16.1 Mt in 1992[6]. It is known that the level of stocks is an important indicator of supply/demand conditions, and market forces dictates that lower stocks entail price rises. However, for iron ore this was not the case in 1994, since despite the cutbacks in stocks, prices continued to fall given the structure of price formation and the pressure exerted by the large integrated steelmakers.

29. Throughout 1994, as the steel industry ran close to capacity levels, not only were higher volumes of ores were to feed the furnaces but stocks had also to be rebuilt. However, as the global steel market remained extremely firm all year, particularly in the United States and the EU, the additional quantities of imported ores were insufficient to bring back stocks to regular levels. Moreover, accidents with iron ore vessels also affected deliveries. Consequently, inventories held by major consumers remained low at the end of 1994, albeit at a less critical level than in 1993. As most suppliers were sold out, their stocks were also low. In the United States, inventories at mines and docks had been drawn down to about 15 days of supply at the end of 1994, when normally they stand at around 35-40 days[7]. By that time, the stock situation was better perceived and contributed to the increase of iron ore prices for 1995.

III. FACTORS INFLUENCING IRON ORE SUPPLY

30. Globally, iron ore output continued to grow. In 1994, world iron ore production increased by 3.5% to about 970 Mt, despite the drastic cutbacks in

iron ore mining in the CIS. Almost all major producers expanded production scales to maximize tonnages. However, as orebodies are not homogeneous and given the growing number of low-grade deposits being mined, particularly in China, the world average Fe content slightly decreased to 55.7%. In terms of Fe content, world production totalled 540 Mt in 1994.

31. Supply conditions remained tight all the year. Several iron ore mining companies operated at full capacity and took advantage of the momentum to accelerate capacity expansion programmes, without neglecting quality considerations. More companies received the ISO 9000 series certificate.

32. Brazil is now the leading iron ore producer in terms of marketable ores. It is true that since 1992, China has ranked at the top among major iron ore producing countries. However, of the total of nearly 240 MT of crude ores mined in China, less than half are usable ores. Production also picked-up strongly in Australia, Canada, Mauritania, South Africa, Sweden and the United States.

Table 3

Iron ore production by major producing countries, 1987-1994
(million tons, natural weight, marketable ores)

Country	1987	1989	1992	1993	1994	1994/1993 change %
1. China*	144.0	162.1	195.9	234.7	239.0	1.8
2. Brazil	134.1	153.7	145.9	150.0	167.8	11.9
3. Former USSR	250.9	241.3	175.0	154.0	136.0E	-11.7
4. Australia	101.7	105.8	117.2	121.4	128.7	6.0
5. United States	47.6	57.9	54.9	55.7	58.4	4.9
6. India	51.3	51.4	54.9	55.6	57.5E	3.4
7. Canada	36.5	41.1	34.4	32.3	37.0	14.6
8. South Africa	22.0	30.0	28.2	29.4	32.3	10.0
9. Sweden	19.7	21.8	19.3	18.7	19.9	6.3
10. Venezuela	17.2	18.0	18.1	17.5	16.1	-7.9
World Total	**930.5**	**983.2**	**914.6**	**938.3**	**970.7**	3.4

Source: UNCTAD secretariat
* low-grade crude ore, not usable as such
E = estimated

A. World market for agglomerated ores

Sinter

33. Despite the easier availability and the low prices of fines, world sinter output declined to 523 Mt in 1994. Recent rationalization carried out by the Japanese and the EU steel industry led to further cuts in sintering capacity. Nevertheless about 40% of total sinter continue to be produced and consumed in OECD countries. In the CIS, sintering capacity has been sharply reduced and output nearly halved during the 1990-94 period. The reverse situation is taking place in China, which is now the largest producer and consumer of sinter. Additional capacity allowed a fast growth of Chinese annual output from 87 MT in 1990 to about 113 Mt in 1994. From the above it is easy to conclude that fines and concentrates remain the most used type of marketable ores, accounting for about 60% of total iron ore consumption.

Pellets

34. The market for pellets has been buoyant since 1993, and a subsequent shortage occurred in 1994. Major exporters are already over-booked for 1995. Pellet producers operated at full effective capacity with little scope to meet any further increase in demand. This has not only helped to accelerate projects already in construction, but also prompted investment decisions for additional capacity. In 1994 a new plant (3.3 MT) started in Venezuela mainly to produce DR-pellets for the domestic market. In early 1995, the new Swedish plant became operational (4 MT) bringing the country's pelletizing capacity to around 15 MT. In North America, pellet capacity which is currently around 87 Mt is likely to grow by 4.5 Mt in 1995[5]. India and Bahrain are also rising production rates and planning to rise capacity (see Annex I). Worldwide, pelletizing capacity is presently estimated at 265 MT, and 20 countries are currently producing pellets, although only 11 are supplying the world market[6].

35. Exports of pellets reached the record level of nearly 81 Mt in 1994. All exporters benefitted from the strong market, and about 35 Mt of pellets were sold to DRI plants. Brazil exported a record tonnage of nearly 27 Mt since all its plants were in full operation; plans to construct additional capacity are underway. The CIS has about 75 Mt of pelletizing capacity and recently increased its penetration in the world market, supplying mostly to Eastern European countries. In North America, pellets production increased by 8.5%. In the United States, growing domestic demand stimulated increases in capacity, which were achieved through the activation of idle plants.

Table 4

Major pellet exporters, 1987-1994
(million tons)

Country	1987	1989	1992	1993	1994	1994/93 Change %
1. Brazil	20.0	23.3	21.3	23.0	26.8	16.2
2. Canada	13.1	17.3	13.3	12.9	16.0	23.9
3.Former USSR	10.9	11.5	9.8	11.2	12.0E	0.7
4. Sweden	6.1	6.5	6.7	7.5	6.9	-7.4
5. United States	5.0	2.9	4.7	5.0	4.9	-2.8
6. Peru	1.7	1.5	1.1	2.3	3.9	67.2
7. Chile	3.3	3.6	2.7	3.6	3.3	-8.0
8. Bahrain	-	0.8	0.9	2.1	2.9E	35.7
9. India	0.8	1.9	1.5	2.2	1.8	-15.0
10. Venezuela	0.4	1.2	1.1	1.2	1.1	-12.5
World Total	**66.7**	**75.8**	**64.7**	**72.7**	**80.8**	**11.2**

Source: UNCTAD secretariat
E = estimated

B. Regional developments

1. Africa

36. With an increase of 8%, African iron ore output amounted to 48 Mt level, reflecting higher levels of mining activities in South Africa and Mauritania, the major producers in the continent. However, as Liberia remains out of the world trade scene, and potential new-comers such as Guinea and Senegal continue to struggle to develop new mines, the full potential of Africa as a major world iron ore supplier remains under-utilized.

37. South Africa recorded a vigorous growth of its iron ore operations in 1994. Production was 10% higher exceeding 32 Mt, of which nearly 20 Mt were exported. The performance of ISCOR's Sishen mines improved considerably, and investments on new deposits may occur if the market remains firm. Already in 1995, in order to meet the surge in demand for lumps, trial shipments of a new DR-lump product are planned to start[10].

38. Mauritania produced 10.5 Mt of ores in 1994, 9% more than in 1993. The entire production was exported to ten countries. New exploitation at M'Haoudat and the Kedia's TO14 orebodies gave a new impetus to SNIM's iron ore operations, which can now produce at an annual rate of 12 Mt. Furthermore, a new source of lumps was timely and welcome in the world market.

2. Asia

39. The total volume of iron ore produced in the developing countries of Asia continues to grow. In China, iron ore mining is still growing, albeit at a much slower rate. Domestic output increased by less than 2% in 1994 compared to 14% in 1993. This was a sign that the expansion of Chinese low-grade production is reaching a limit, mainly because of the high investments needed to improve beneficiation and transportation facilities. Priority has been given to the development of the steel industry, which is relying more and more on imported ores.

40. In India, in order to meet the fast growth in domestic consumption and maintain the level of exports, iron ore production increased to 57 Mt in 1994. Measures taken to accelerate the development of the steel sector include the modernization and expansion of iron ore mines and related infrastructure. While the mines in Madhya Pradesh, Bihar and Orissa are supplying the domestic market, production from Goa, Bailadila and Kudremukh is for exports. Indian authorities recently decided that MMtC will continue to channel the exports of Indian ores, except those of Goa origin which will be now freely exportable to all markets[11]. However, given the growing number of DRI plants, demand for domestically produced DR-grades lumps and pellets will continue to increase and may restrict exports.

41. The Democratic People's Republic of Korea has abundant iron ore reserves and at present it is estimated that around 10 Mt of ores, mainly to feed its own steel industry, is produced in this country. Conversely, in the Republic of Korea a very small volume of iron ore is presently mined, although the recent discovery of a high-grade deposit in Hwanghae Province may change this picture in the future[12]. In Vietnam, pre-feasibility studies gave positive signs for the development of the Thach Khe deposits, but the project is being further examined.

42. In West Asia, the Islamic Republic of Iran is further developing its iron ore mining operations in line with the expansion of the steel industry. In 1994, not only the Gol-e-Gohar project started producing 2.5 Mt, but decisions were taken to expand the mine/plant design of the Chogart and the Se-Chahum projects, Iranian iron ore output which was around 4 Mt in 1994[13] will continue to rise. In Turkey, the slowdown of the economy has not affected the level of iron ore output which remained at 5 Mt. In Saudi Arabia following a positive evaluation of the Wadi Sawawin deposits, the development of an open-pit deposit may start soon with a view to produce annually 4.5 Mt of taconite ores for pelletization.

3. Eastern Europe

43. In the CIS States the sharp reduction in iron ore output continued. A further 12% drop, set back total production to around 136 Mt in 1994 compared to 266 Mt in 1990. Insolvency was the main reason why the steel industry inside the republics was unable to purchase locally marketable ores. Large surpluss and better export structure allowed a rise of CIS' iron ore exports last year. In the Russian Federation only 75% of iron ore capacity was utilized, but the Program for the Renovation and Development of the Russian Metallurgy is being gradually implemented[14]. Targets include the modernization of the iron ore industry and a more rational use of raw materials. Russia's major producer, Lebedinsky GOK, is already using advanced mining technologies and producing high quality concentrates and pellets, of which 30% were exported to world markets in 1994[15].

44. In Ukraine the situation is more critical since energy shortages continue to affect mining and steel operations seriously. Production and supplies of iron ore fell drastically. Moreover, transportation difficulties linked to the situation in the former Yugoslavia, are threatening ore deliveries to traditional customers in Hungary and Austria. In Kazakhstan iron ore mining is concentrated at the Lisakowvky mining complex, but output, which was mostly to supply Russian steelworks dropped, and presently represents less than half of the 25 Mt capacity.

4. Western Europe

45. Among the countries of the European Union (12 in 1994), only France and Spain are still mining iron ore. Their combined output in 1994 was inferior to 5 Mt, since low quality and high production costs led to successive closures of mining sites. In France, the only mines in operation are run by Arbed (Luxembourg's steelworks); their future is threatened because Arbed is shifting its steelmaking process from blast to scrap-based electric furnaces. In Spain, Cia Andaluza de Minas (CAM) is facing serious financial problems, supplied about 1.5 Mt of ores to EU countries in 1994.

46. Sweden, the major iron ore producer in Western Europe, produced nearly 20 Mt in 1994, of which 11 Mt of pellets. Despite the strong demand, LKAB's exports were 6% lower because its own stocks were depleted in 1993 and had to be rebuilt. Investments in a new pellet plant raised LKAB's pelletizing capacity to over 15 Mt, and the company is now able to produce up to 24 Mt of iron ore products annually. Norway produced 2.5 Mt of ores, almost all transformed into pellets by Sydvaranger, its State-owned company which is undergoing restructuring that may

imply in a reduction of its mining operations. Austria mined over 1.5 Mt of ores in 1994.

5. Latin America and the Caribbean

47. Latin American iron ore production rose sharply in 1994. Brazil produced the all-time high level of 168 Mt an increase of nearly 12% over 1993, which ranked Brazil first among the largest producers of marketable ores. Soaring domestic and international demand, fostered Cia Vale do Rio Doce - CVRD (the world largest supplier) to achieve a record mining performance. CVRD's total iron ore sales exceeded 100 Mt, of which 77 Mt were exported. Despite the interruption caused by the loading accident at Ponta da Madeira later in the year, shipments from Carajas totalled 36 Mt. The six pelletizing plants operated by CVRD and its joint-ventures also run at record levels producing nearly 19 Mt of pellets in 1994.

48. All major Brazilian iron ore producers benefitted from the market upturn. Mineraçoes Brasileiras Reunidas - MBR, a major supplier of lump ores, increased production and exports to 25.5 and 23 Mt respectively. The first phase of Pico's mine expansion was completed in 1994, and the ongoing works on its Sepetiba's export terminal is likely to be completed this year; this will enable MBR to produce annually up to 30 Mt and further increase exports. For Samarco, 1994 was an excellent year, shipments rose by nearly 15% due to the steady demand for pellets and pellet-feed. This prompted Samarco's decision to construct a new 5 Mt/capacity pellet plant which will bring its annual capacity to 11 Mt by 1997. Ferteco also improved levels of output and exports, producing over 10 Mt of different ore products including pellets and lumps. Samitri, another major supplier which recently invested to raise its mining capacity, exported 8 Mt of ores last year.

49. In Venezuela, after the peak of 1990 when iron ore mining output reached 20 Mt, levels of production and exports have been decreasing. In 1994, CVG Ferrominera produced 16 Mt of ores and maintained its level of exports at around 10.5 Mt. However, the development of projects to produce higher value-added products continues. The first phase of its new pelletizing complex was concluded in 1994 (see para. 34 above), and a second stage to add a second pelletizing line is envisaged. Furthermore Venezuela, which presently has 15% of world's DRI capacity, is planning to increase further its current DRI capacity by 3 Mt.

50. In Peru, for the second consecutive year, annual iron ore output doubled. In 1994, the highest-ever level of 11 Mt of ores were produced by Hierro Peru, including nearly 4 Mt of pellets. Since 1992, after the acquisition of Hierro

including nearly 4 Mt of pellets. Since 1992, after the acquisition of Hierro Peru by Shougang, more than 50% of Peruvian output has been exported to China. Now, other foreign investors are considering to develop the Opaban deposits whose probable reserves are estimated at 700 Mt[16]. In Chile iron ore production by CMP was around 8.5 Mt in 1994, and nearly 85% were exported to 12 countries. Preliminary operations at Los Colorados may start in 1995, preparing for the changeover by 1998 when the Algarrobo deposits will be completely depleted. This replacement is not expected to affect Chilean world supplies. Mexico also expanded iron ore mining operations to an annual rate of 9 Mt to meet growing domestic demand. In 1994, the Cerro de Mercado mine was re-opened after eight years of closure to supply concentrates to Ahmsa's steelworks[17].

6. North America

51. Despite the sharp rise in North America's demand for steel products in 1994, the level of crude steel production could not be equally increased due to capacity limitations. The North American iron ore industry also reached its limits producing over 95 Mt, 8.5% more than in 1993. In the United States, the iron ore market was extremely tight, especially for pellets. United States mine output in 1994 exceeded 58 Mt of ores (+5%) almost all pelletized. The boom in domestic demand stimulated increases in mining capacity. Supply was somewhat eased when the then idled pellet plant of National Steel and the Eveleth mines re-started operations; both will run for the full year of 1995. Moreover, the idled pelletizing lines of Northshore's plants will also be activated. The re-opening of these installations will add some 7.5 Mt of effective capacity to the United States iron ore industry in 1995.

52. Canada produced 37 Mt, a jump of nearly 15% over 1993. Thanks to the strong demand in the United States, Canadian iron ore exports also rose sharply by 15% in 1994. The iron ore industry was so busy that some workers who had been laid-off in 1993 were recalled, and usual summer shutdowns did not occur last year[18]. Shipments from QCM exceeded 16 Mt, and sales from IOC's Carol Lake operations totalled 15 Mt, being 2 Mt higher than in 1993. Output from the Wabush mines also improved.

7. Oceania

53. Australia retained its position as the world's largest exporter of iron ore in 1994, exporting 126 Mt to world markets. The expansion of the iron ore industry in the Pilbara region is going fast. About 129 Mt of ores were produced (+6%) and iron ore mining capacity in 1995 will reach 135 Mt. Dominant producers are Hamersley Iron and BHP Iron Ore, now producing at similar levels (50 Mt) for

a range of lumps and fines. Robe River, the other main company, produces only fines and is now able to ship annually up to 30 Mt. This company has recently announced the possible re-opening of its Cape Lambert pellet plant to supply pellets mainly to China and Japan.

54. Since 1990, seven new iron ore mines have been started in Pilbara: Hamersley's Chanar, Marandoo and Brockman No 2; BHP's Yandi, Jimblebar and Yarrie; and Robe River's Mesa J. Recently, new development goes beyond the Pilbara region; the Portman joint venture (Anshan Steel, China) started in 1994 producing 2Mt/year at Koolyanobbing deposits and processing low-grade ores from stockpiles at Cockatoo Island[19]. A next step may be the development of the Hope Downs deposit by Hancock Mining. Furthermore, there are several projects for further processing of iron ore in Western Australia, to take advantage of the expected reductions in gas prices. HIsmelt pilot facility (CRA/Midrex) is undertaking experimental tests, and plans to build DRI plants were recently announced by BHP as well as by CRA.

C. Investments and project financing

55. Although the successive drop of iron ore prices has not been conducive to commitments for new greenfield projects, companies already well-placed in the world market continued to invest in expansions of existing operations in order to retain market shares and assure long-term supply. Undoubtedly, the market up-turn of 1994-95 brightened prospects and encouraged new ventures. Higher pellet prices in 1995 have already stimulated new investment decisions to avoid shortages as experienced recently. Nevertheless, the iron ore industry should not over-react; peaks do not occur every year. The announced additional capacity due to come on stream in the next few years may already be adequate to meet projected demand. (See Annex I).

56. Four main projects started operations in 1994: (i) the M'haoudat Project in Mauritania was inaugurated in April to produce annually 6 Mt of high grade ores during the next 20 years; (ii) the Marandoo Project of Hamersley in Australia designed to produce 12 Mt annually started-up in August; (iii) the extension of the MBR's Pico Mine in Brazil, a first step in MBR's long-term programme, started operations in September bringing the annual capacity of Pico to 11 Mt; and finally (iv) the new pelletizing plant of CVG in Venezuela inaugurated in October, will produce over 3 Mt of pellets annually. In 1995, the new pelletizing plant of LKAB in Sweden came on stream to produce an additional

4 Mt of pellets. Moreover, some mines and pelletizing lines are being rehabilitated in the United States to cope with the growth in demand.

57. Cutbacks in capital financing from multilateral organizations led to greater involvement of institutional investors, and growing participation of the private sector, both national and foreign, in the iron ore mining industry. In addition, commercial banks are playing a growing role in preparing bankable privatization schemes and assisting in the evaluation of mining assets. New financial options such as debt-equity swaps, export finance programmes, equipment supplier finance etc. are also being used by the iron ore industry to fund new projects and/or to revitalize existing mining complexes. Nevertheless, the traditional long-term or take-pay contacts are still largely used as collateral for financing new projects.

D. Privatizations and Corporate highlights

58. To implement privatization policies, major iron ore producing countries such as Brazil, China, India, Russia, Venezuela and Ukraine, are revising mining legislation, investment codes, credit mechanisms and incentive policies for domestic and foreign investors. Ownership and entry restrictions have generally been reduced and some taxation regimes are being relaxed to attract foreign investments. The globalization of the iron ore industry is creating new investment opportunities.

59. The hottest issue is the forthcoming privatization of CVRD in Brazil (see box below). In China, the emerging private arm in the iron and steel sector has also greater freedom to make trading decisions and investments overseas. The number of joint-ventures and partnership agreements involving Chinese steelmakers with major foreign iron ore suppliers are multiplying. In India the opening-up of the mining sector is also giving some fruitful results. Orissa Mining recently announced that five multinational companies including BHP and RTZ, were potential partners to set-up a joint venture for investments in a new iron ore mining complex in Keonjar, Eastern India. Furthermore, Kudremukh Iron Ore Company (KIOCL) was listed among the public corporations for which capital shares will be partially offered publicly.

Companhia Vale do Rio Doce - CVRD

In Brazil, following the official announcement in May 1995 of the privatization of its biggest mining company, Companhia Vale do Rio Doce -CVRD, a Constitutional amendment is expected to abolish the restrictions on foreign capital in the mining sector. The sale of government's 51% majority stake in CVRD attracted great interest in financial markets as well as from transnational mining corporations and steel producing companies. CVRD has been the most profitable State-owned company in Brazil. This company is not only the world's largest iron ore exporter with a share of 18% of world iron ore trade, but it also ranks among the top five world mining corporations. Horizontal and vertical diversification transformed CVRD into a giant industrial complex with activities in mining (iron ore, gold, bauxite, manganese, potassium and kaolin), metal processing, railways, transport logistics, shipping and forest products. In downstream sectors, CVRD is involved in steelmaking inside and outside Brazil, as well as in the ferro-alloy and the aluminum industry.

60. In the Russian Federation, a number of mining activities formerly closed to foreigners are being gradually liberalized, despite some worries about an eventual pillage of mineral assets. The Law of Mineral Resources (MRL) was adopted in 1992 to govern all matters relating to the exploration, mining and conservation of all minerals[20]. To promote foreign investments a program is being set-up for the creation of interstate financial and industrial groups. In 1994 about 75% of Russian steelworks were transformed into joint-stock companies, in which 51% of the shares are redeemed by labour groups and the remaining are due to be sold to private national and foreign investors. The case of two iron ore mining complexes, the Stoilensky and the Kostomukshsky are being examined[21].

61. The ownership control of the world iron ore industry remains highly concentrated. State-owned companies are responsible for a third of world iron ore output. In 1993, three leading iron ore companies, namely CVRD, BHP and RTZ controlled nearly 35% of world iron ore production, and the ten largest together reach almost 60%[22]. The domination of the iron ore industry by steel companies had gradually weakened and there are now only four steel companies among the top ten iron ore producing companies. While North American and European steelmakers reduced their interests, Japanese and Chinese mills have increased. The focus of interest has shifted to Latin America and Australia.

IV. TRADE IN IRON ORE

62 The year of 1994 recorded a new peak for world iron ore trade. Global exports rose by 7.5% and reached the all-time high level of 430 Mt. This impressive growth represents a cumulative increase in iron ore trade of over 15% during the 1993-94 period, meaning that the strength of world economic recovery was beyond expectations. Contrary to the situation in 1993, when the trade upturn reflected the boom in Chinese steel demand, this time the driving force came from industrialized countries, mainly the United States and the EU. This was evidence of the continuing importance of steel in conditions of economic growth, even in the most advanced countries.

63. In addition to the positive signs from Asia and North America which were already visible in 1993, an unexpected positive development in 1994 was the sharper than expected 15% rise in the volume of iron ore imports into the European Union. The pick-up of the steel market in the EU led to a rise of over 20% in the volume of imported ores by Germany, France and the United Kingdom. Significant increases also occurred in Belgium/Luxembourg and Spain, while in Italy the greater use of scrap is reducing the level of iron ore imports.

64. Again in 1994, iron ore was the most traded non-energy mineral commodity, and its global exports amounted to $United States 8 billion. However while the rise in the volume of iron ore trade was accentuated (+ 7.5%), the increase in value was more modest (5.5%). As iron ore prices are quoted in dollar terms, the combination of lower prices and weak dollar eroded part of exporters' gains, especially in countries where national currencies were over-valued. Importers however, greatly benefitted from this situation, particularly in Japan and Germany where steelmakers paid for cheap ores with strong currencies.

Table 5
Iron ore exports by major exporting countries, 1987-1994
(million tons)

Country	1987	1989	1992	1993	1994	1994/1993 Change %
1. Australia	78.6	104.5	106.6	116.5	126.2	8.3
2. Brazil	97.3	111.6	106.0	111.9	125.0	11.8
3. CIS	45.4	39.9	27.0	29.3	32.0E	9.2
4. Canada	29.7	30.2	25.1	26.2	30.1	15.0
5. India	29.0	33.5	28.5	30.0	28.5E	-5.0
6. South Africa	8.8	14.6	14.9	19.0	19.6	3.1
7. Sweden	16.8	17.5	15.5	16.4	15.4	-6.3
8. Venezuela	11.7	14.4	10.2	10.5	10.7	2.3
9. Mauritania	9.0	11.1	8.1	9.7	10.3	7.1
10. Chile	5.3	7.4	5.7	6.3	6.6	6.0
World Total	369.1	421.2	370.7	400.8	430.5	7.4

Source: UNCTAD secretariat.
E = estimated

65. Australia and Brazil continue to dominate the world iron ore scene. Thanks to ongoing expansions, these countries have reinforced their leading supplying position in the 1990s. Each of these countries have almost 30% of the world market share. Concommitantly, other exporters have been losing market shares, despite the recent increases in export volumes.

66. As regards imports, despite the slowing-down of the Japanese market, Japan still has 28% share of world imports, maintaining a wide gap from the second largest importer - Germany. An interesting development in 1994 was the sharp increase, by over 25%, of iron ore imports into the United States.

67. China moved up to the third place among the top importers. Though the pace of import growth eased, Chinese iron ore imports were 13% higher in 1994. The Republic of Korea, however, moved down to the fourth place because despite the growth in steel output, iron ore imports declined for the first time as a consequence of ironmaking capacity limitations.

Table 6
Major iron ore trade partners - 1990,1994

Major Exporters	Share (%) of world exports		Major Importers	Share (%) of world imports	
	1994	1990		1994	1990
1. Australia	29.3	24.3	1. Japan	28.1	31.5
2. Brazil	29.0	28.9	2. Germany	10.3	11.0
3. CIS	7.4	9.2	3. China	9.0	3.6
4. Canada	7.0	6.8	4. Rep. of Korea	8.3	5.6
5. India	6.6	8.0	5. France	4.9	4.7
6. South Africa	4.5	4.3	6. United Kingdom	4.7	3.7
7. Sweden	3.6	4.2	7. United States	4.2	4.5
8. Venezuela	2.5	3.5	8. Italy	4.0	4.3
9. Mauritania	2.4	2.9	9. Belgium/Lux.	3.6	5.1
10. Chile	1.5	1.7	10. Czechoslovakia (former)	3.0	3.6

Source: UNCTAD secretariat.

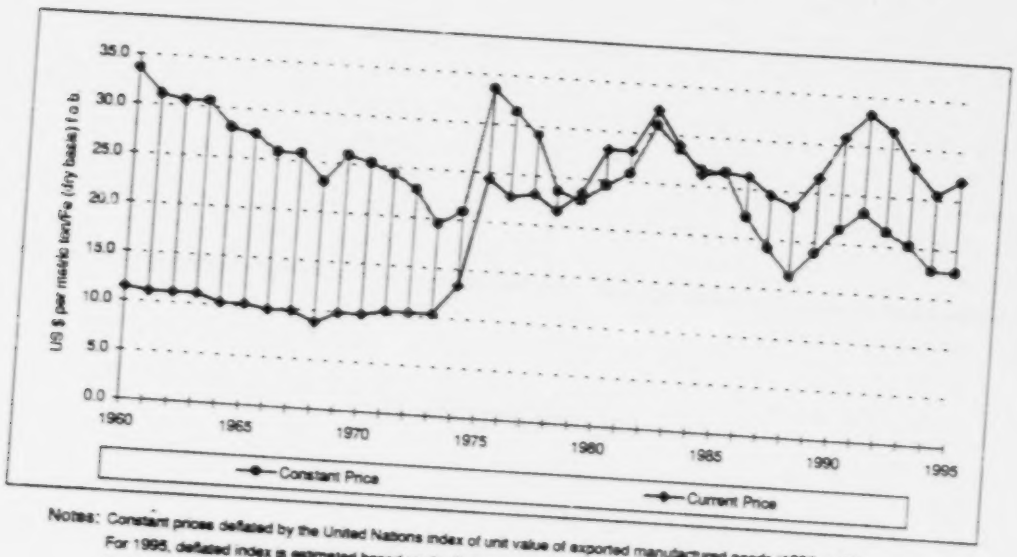
V. IRON ORE PRICES

68. In 1994, despite the trade upturn, the earnings of iron ore exporters were affected by the successive falls in world iron ore prices. The tighter supply situation already visible by the end of 1993 had not prevented another collapse in prices. The reference world price was agreed upon in February 1994 by Hamersley Iron from Australia and the Japanese integrated steelmakers. The result was a drop of 9.5% for fines, and 5.9% for lumps. In the case of pellets, as the supply shortage was evident there was greater reluctance on the part of Brazilian suppliers, and finally agreement was reached that pellets prices would remain unchanged. Nevertheless, iron ore (with manganese ore) was the only major commodity lagging behind the recent rise in commodity prices.

69. The peak of iron ore trade in 1994 paved the way for higher prices in 1995. Trade figures for the third quarter of 1994 clearly indicated that a rise of iron ore prices in 1995 was imminent. However, the price setter in 1995 - Australia's BHP - did not succeed to take full advantage of one of the tightest-ever market

conditions to rise iron ore prices accordingly. The benchmark price rise of 5.8% for fines and 7.9% for lumps was relatively modest, particularly if account is taken of the successive sharp price increases of steel products and ferrous scrap since 1993.

Chart IV - Iron Ore Current and Constant Prices, 1960-1995



Notes: Constant prices deflated by the United Nations index of unit value of exported manufactured goods (1985 = 100).
For 1995, deflated index is estimated based on the first quarter of the year.
Reference price: Europe: Brazil (CVRD) fines, 64.5 % Fe.
SOURCE: UNCTAD secretariat.

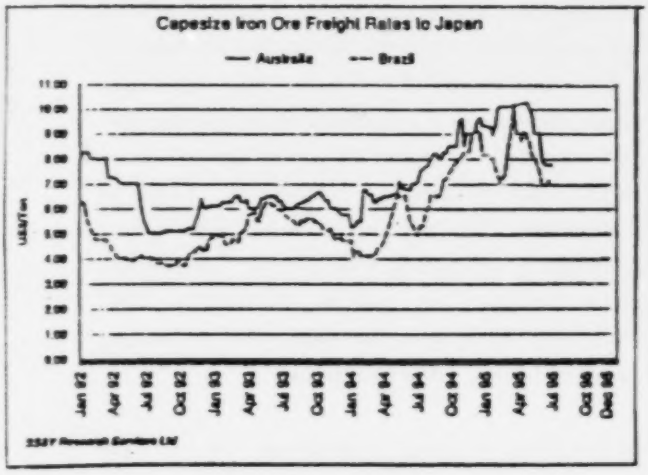
70. Moreover, a weak dollar means lower revenue from iron ore sales in domestic currencies. The sharp swings seen in exchange rates, in particular the deep depreciation of the United States dollar/Y and the United States dollar/DM which took place in early 1995, has been an advantage for the Japanese and German steelmakers in detriment to iron ore exporters. For instance in July 1995, the United States dollar was 15% weaker against the Japanese currency than it was one year before. This, could raise the question as to whether this kind of distortion could be avoided in the future, if iron ore could be priced in yen and/or DM, which are the currencies of its major markets. This probably would bring more stability to the earnings of iron ore exporters.

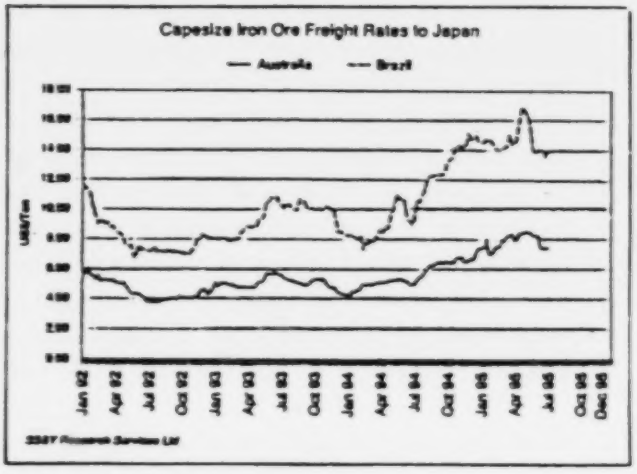
VI. TRANSPORTATION COSTS AND FREIGHT RATES

71. The remarkable surge of iron ore shipments has greatly contributed to the sharp rise of dry bulk freight rates, in particular during the last quarter of 1994. As about 90% of global iron ore trade is seaborne, extra ore tonnages caused an immediate tightening on vessel supply situation mainly for the Capsize fleet. As it was obvious that iron ore prices would rise in 1995, buyers had strong reasons to request the speed-up of deliveries at the end of 1994. This provoked congestions and delays in both importing and exporting ports particularly in Italy, Japan, Australia and Brazil. Moreover, casualties involving iron ore cargoes and vessels going for demolition, aggravated dry bulk market conditions.

72. As a result, freight rates for iron ore reached records unseen for over 10 years. As world trade continued to increase, rates remained high during the first half of 1995, and bulk shipping market fundamentals point to a volatile market throughout 1995, with dry cargo rates remaining at high levels[23]. This will continue to favor iron ore suppliers which are near to major consuming markets.

Chart V: Iron Ore Freight Rates





73. The problem preoccupying iron ore exporters and importers is the growing number of accidents with iron ore cargoes. In 1994 a total of 14 vessels sank, 10 were transporting iron ore and 9 were over twenty years of age[24]. The issue of technical standards and the age and condition of the world fleet, requires a concerted and globally acceptable action for monitoring the maintenance and safety of bulk vessels. Some iron ore producers, consumers, traders and shipowners have already attempted to find viable solutions. Although some preventative measures are being taken in some countries, a joint effort is needed to find long-term solutions.

VII. ENVIRONMENTAL AND TECHNOLOGICAL ISSUES

74. Methods for managing environmental risks and improving pollution control at mining sites are evolving fast. Although some companies have more resources and are more engaged than others, in general, the iron ore industry is gradually integrating environmental objectives into their overall business goals. Despite the differences in national environmental legislation, solutions to deal with problems of mining wastes and rehabilitation of mined-out areas are being found. Nevertheless, the issue of how to internalize environmental costs without distorting competitiveness seems to require specific economic instruments and inter alia some regulatory universally-acceptable approach[25].

75. As a number of top quality iron ore deposits are approaching exhaustion, the iron ore industry is presently engaged in finding technological breakthroughs to prolong the physical life-time of high-grade orebodies, and/or to develop most advanced techniques for upgrading the metallurgical composition of lower quality ores. This not only will help major suppliers to maintain the level of shipments but it will also enable them to offer new options of product mix. For instance in Australia, the rapid depletion of Tom Price's deposits led Hamersley to invest in a new processing plant to reduce levels of alumina content by removing ultra-fines from all fine ores produced at Paraburdoo and Channar. In Sweden, LKAB is investing in a new haulage level at Kiruna, the world's largest underground mine, at a depth of 1045 meters (corresponding to about 300m below sea-level) to extend its life-time for more 20 years and reduce production costs. Brazil's CVRD developed a technology to process waste recovery at Ponta da Madeira, allowing the recuperation of ores which have been accumulated in stockpiles[26].

76. In the present context, the classification of mineral reserves, as well as the parameters of economical criteria to justify the development of new reserves, require a re-assessment. It is possible that deposits containing higher levels of impurities such as phosphorous, which make them unacceptable and economically

unfeasible today, may have to be mined tomorrow. The ongoing modernization of the steel industry and the gradual introduction of new ironmaking technologies have induced the iron ore industry to invest in R&D in order to combine more efficient and environmentally-sound extraction techniques with their commitment to pursuing quality standards along the ISO guidelines.

77. As lumps become scarce, pellets more expensive, and scrap prices rise, among the emerging ironmaking processes the most promising are those which will smelt or reduce directly, high-grade low-priced fines, avoiding any cost-intensive preparation. From the environmental point of view, the ideal combination seems to be fines/gas prescribed by processes such as the FIOR, iron carbide and Circored. The first shipment from the iron carbide plant in Trinidad and Tobago was made in early 1995 and the plant is expected to be in full capacity by August this year. However, the main challenge of this process will depend not only on the operational results of Nucor's electric furnaces, but also on testing the technical viability of extending iron carbide use in integrated steelworks. Among the technologies using fines and non-coking coals, the most advanced are: Hismelt in Australia and DIOS in Japan. Both are at experimental stage in which tests seems encouraging but further research is needed to define the commercial viability of these new-generation ironmaking alternatives.

VIII. SHORT-TERM OUTLOOK

78. Despite the turbulances in the currencies and financial markets, the first half of this year has shown a strengthening in world economic growth. Reassured consumer's confidence was translated into growth of steel-consuming sectors which led to a significant rise in world crude steel output. From June 1994 to June 1995, global steel output recorded its sharpest rise (+5%) since 1988. Furthermore, metallics supplies remained tight. This led to further increases in global iron ore demand, and a new peak of iron ore exports was reached during January-June 1995.

79. Several factors are contributing to another strong year for world iron ore trade. In the OECD area, steel production is expected to increase by over 2.5% in 1995, which will help to maintain steel prices at high levels[27]. Japan's industrial and steel production, which accelerated during the first half of the year causing a rise of over 10% in iron ore imports during the first five months, is expected to slow because the strong yen continues to erode export

sales of Japanese manufacturing industries[28]. Conversely, in the United States, although economic growth has softened, the weak dollar has led to a surge of (direct and indirect) steel exports, helping to keep the United States steel market fairly strong. In the European Union, investments supported by lower interest rates are driving up the economies. In 1995, total steel output in the EU's 15 States is likely to increase because domestic demand remains strong, although exports are negatively influenced by the weakness of the United States dollar.

80. In developing countries, after the shake-off caused by Mexico's financial crisis, important economic reforms are being introduced particularly in Latin America and most economies are regaining their upward momentum. In China, as well as in other fast developing countries of Asia and the Middle-East, the steady growth of the steel sector continues, albeit at a slower pace.

81. For the CIS, 1995 is marking a turning-point. For the first time since 1989 crude steel output increased by 4% during Jan-June 1995, showing that economic recovery is finally starting. In other Eastern European countries, signs of resumption of steel demand and a more stable economic situation started to be seen already in 1994.

82. As a total reversal of the current situation seems unlikely during the second half of the year, the evidence above seems to indicate that for the world iron ore market - better than 1994 only 1995. The outlook for 1996 appears bright. Global demand and prices for steel and iron ore products could rise further. The engine will probably be strong economic activity in developing countries including China, as well as in the countries of Eastern Europe.

Notes

1. As indicated in UNCTAD's last year report Review of the current situation and outlook for iron ore - 1994 (TD/B/CN.1/IRON ORE/13). Paragraphs 4 and 65

2. As reported in the OECD Press Release (SG/95 34), May 16, 1995.

3. According to the compilations made by the International Iron and Steel Institute, the share of electric furnaces (EAF) in world steelmaking reached 32.5% in 1994.

4. See: Direct from Midrex, by Midrex Corp., 1st. Quarter 1995

5. As reported by the U.S. Bureau of Mines, Mineral Industry Surveys, Iron Ore in March 1995

6. As shown in the "Revised version of the iron ore statistics -1989-1993", prepared by the UNCTAD secretariat and circulated at the 1994 session of the Intergovernmental Group of Experts on Iron Ore.

7. See: New "Iron Age" for integrated producers - Steel entering a "golden profit decade", by Paine Webber, New York, May 1995

8. See: Steel Strategist # 21, Paine Webber, New York, May 1995

9. See: Iron ore statistics - 1987-1994, UNCTAD publication (TD/B/CN.1/IRON ORE/17), August 1995

10. As reported by Metal Bulletin "Ore miners line up to demand price rise London, November 24, 1994

11. See: Indian Government Amends Policy on Iron Ore Exports, extract of a press release by the Commerce Ministry, published by Tex Report, June 9, 1995

12. See: Korean Iron Ore Discovery, as reported by Mining Journal, London, April 21, 1995

13. Production figures for iron ore production in Iran has been revised. See Iron ore statistis 1987-1994 (TD/B/CN.1/IRON ORE/17)

14. As reported by Mr. L.Shevelev, Vice-chairman of the Russian Federation Committee for Metallurgy, at session of the UNCTAD's Intergovernmental Group of Experts on Iron Ore, Geneva, 1994

15. See: Lebenkinsky Gok: a leading Russian iron ore producer, by A.T.Kalashinikov. Paper presented at Metal Bulletin's Iron Ore Symposium, Vienna, 1995

16. See: Peru studies second iron ore mine, by Metal Bulletin, 12 December 1994; and Pan World to develop Peruvian iron mine, by Mining Journal, 16 December 1994.

17.See: Mexican Fe mine reopened, in Metal Bulletin Monthly, November 1994

18. As reported by B. Boyd, at the annual session of UNCTAD's Intergovernmental Group of Experts on Iron Ore, Geneva, 1994

19. See: Iron ore - the new wave, by D. Roberts. Published at Prospect Magazine, Western Australian Government, March-May 1995

20. Reference is made to an article by P.Pettibone and M. Ty Rogers on Russian Mineral Laws, published by E&MJ, July 1994

21. As reported by M. L. Shevelev, Vice-Chairman of the Russian Federation Committee for Metalllurgy, at the 1994 session of UNCTAD's Intergovernmental Group of Experts on Iron Ore

22. See: The ownership structure of the iron ore industry in the 1990s, by M. Ericsson. Paper presented at the 1994 session of UNCTAD's Intergovernmental Group of Experts on Iron Ore, Geneva

23. Reference is made to the analysis made by Clarkson Research Studies. See: Shipping Review & Outlook, London, Spring 1995

24. See: Annual Shipping Review - 1994, as well as Monthly Shipping Review, by SSY Research Services Ltd, London

25. Intergovernmental discussions are underway in UNCTAD with a view to promote policies and measures for the internalization of environmental costs in the prices of natural resources, in support of sustainable development. It was recognized that internalization had to be undertaken collectively.

26. As reported in Jornal da Vale, Rio de Janeiro, March 1995

27. According to projections made by the OECD's Steel Committee, Paris, May 1995

28. See: Industrial production stagnating in Japan, by Financial Times, June 29, 1995; and MITI crude steel guidepost at 25.5 Mt for July-Sept 1995, by Tex Report, June 28, 1995

Annex I

IRON ORE MINING PROJECTS : NEW MINES AND CAPACITY EXPANSIONS - 1995

Company	Location	Planned capacity	Investment ($ million)	Start	Notes
AFRICA					
SNIM	El Aouj, Mauritania	5 MM mt/yr pellets		?	Feasibility studies
NINCO	Nimba ,Guinea/Liberia	12 MM mt/yr ore	410	End of war in Liberia	Seeking financing
MIFERSO	Faleme, Senegal	6-10 MM mt/yr ore	620	?	Seeking finance (includes railroad and port facilities
Buchwa Mining	Redcliff, Zimbabwe	2 MM mt/ore	?	1997	Expansion existing capacity
ASIA					
Anshan Iron & Steel	Qidashan, China	16 MM mt/yr ore	440	1995	Double capacity from 8 to 16 MM mt
Taiyuan Iron & Steel	Jianshan, China	?	?	1995/96	Expanding capacity
National Mineral Dev. Corp.	Deposits No. 5, 11 and 14, Bailadila, India	5 MM mt/yr ore	?	1995/96	Expanding capacity from 9 to 13 MM mt
	Deposits No. 10, 11-A and 11-B, Bailadila, India	8 MM mt/yr ore	?	1997/98	Work in progress for capacity expansion from 13 to 22 MM mt
Kudremukh Iron	Mangalore, India	3 MM mt/yr pellets	?	1990s	Planned pelletizing expansion from 3 to 6 MM mt
Sungjin Iron Mining	Yemi, RO Korea	0.2 MM mt	?	1995	Modernization of facilities
MIDDLE-EAST					
Saudi Arabian Minerals	Wadi Sawawin	4.5 MM mt/yr ore	?	1990s	New mining and pelletezing plant
Central Iranian Iron Ore Company	Bafgh, Iran	3 MM mt/yr concentrates	450	1995	Expansion program
Nisco Company	Chador Malu, Iran	5 MM mt/yr ore	600	1996	New project
Turkish Iron & Steel	Divos, Turkey	0,4 MM mt/yr pellets	3	1996	Expanding capacity
GIIC	Bahrain	1.7 MM mt/yr pellets	?	1997	Expanding capacity to 5 MM mt
SOUTH AMERICA					
CVG Ferrominera	Porto Ordaz, Venezuela	6 MM mt/yr. ore	88	1995	Expanding and modernizing mines and plants
	Porto Ordaz, Venezuela	4 MM mt/yr concentrates	83	1998	
CMP- Romeral	Los Colarodos, Chile	4 MM mt/ pellets	180	1995/98	Replacement
Samarco	Ponta Ubu, Brazil	5 MM mt/pellets	230	1997	Expanding pelletezing capacity from 6 to 11 MM mt/yr
NORTH AMERICA					
National Steel	Minnesota, USA	4.7 MM mt	?	1994	Re-start idle plant
Eveleth Mines	Michigan, USA	2.0 MM mt	?	1994	Re-start idle plant
Cleveland Cliffs (North Shore)	Minnesota, USA	0.9 MM mt	6.1	1995	Re-start idle plant
AUSTRALIA					
BHP Iron Ore	M. Wahleback(Jimblebar)	10 MM mt/yr lump fines	?	1990s	
	Yandi	10 MM mt/yr fines	?	1990s	Expanded capacity from 10 -15 MM mt
Hamersley Iron	Channar, Pilbara	5 MM mt/yr ore	?	1998	Expanding capacity from 5-10 MM mt/yr for China
Robe River	Cape Lambert	3 MM mt/yr lump	8.5	1995	Expansion
	Cape Lambert	5 MM mt/yr pellets	200	1990s	Possible re-opening pelletizing plant
EUROPE					
LKAB	Kiruna, Sweden	2 MM mt/yr ore	315	1996	Extending capacity from 13-16 MM mt/yr
	Kiruna, Sweden	4 MM mt/yr pellets	285	1995	New pellet plant
Z.B.S.N. Ves.	Sidnt, Slovak	0.04 mt	-	-	-

Source: UNCTAD Secretariat based on the work of the Intergovernmental Group of Experts on Iron Ore.
Notes: The information provided is not exhaustive, additional information and-or revisions are welcome
MM = million M = thousand mt = metric ton

Annex II

IRON ORE MINING PROJECTS : CLOSURES AND CAPACITY REDUCTION, 1995

Company	Location	Reduction of of capacity	Effective or planned date	Temp (T) Perm (P)	Notes
AFRICA					
Buchwa Iron Mining	Buchwa, Zimbabwe	Reduction to 1.5 MM mt	1997		
OCEANIA					
BHP Iron ore	Yarrie	7 MM mt/yr ore	2000	P	Depletion of reserves

Source: UNCTAD secretariat based on the work of the intergovernmental Group of Expert on Iron Ore.

Notes: The information provided is not exhaustive; additional information and/or revisions are welcome.

MM = million mt = metric ton

T= temporary P= permanent

UNITED NATIONS

TD

United Nations Conference on Trade and Development

Distr.
GENERAL

TD/B/CN.1/IRON ORE/19
21 July 1995

Original: ENGLISH

TRADE AND DEVELOPMENT BOARD
Standing Committee on Commodities
Intergovernmental Group of Experts
on Iron Ore
Fourth session
Geneva, 23 October 1995
Item 3 of the provisional agenda

ANNOTATED BIBLIOGRAPHY ON IRON ORE - 1995

Prepared by the UNCTAD secretariat

GE.95-52476

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INTRODUCTION

1. Since 1989, in response to the request made by the Intergovernmental Group of Experts on Iron Ore - (IGEIO), the UNCTAD secretariat has been preparing an annual version of the "Annotated bibliography on iron ore", with a view to providing information about current worldwide activities and publications on iron ore and related matters.

2. For the preparation of the 1995 version of this bibliography, all States members of UNCTAD as well as concerned international organizations, were requested to provide copies of recent studies and any other relevant information on iron ore, iron and steel matters. The information provided herewith is based on the replies received as of 10 July 1995, and complemented with information and studies available in the UNCTAD secretariat on iron ore and steel issues, considered to be of interest to iron ore producers and consumers. It focuses on studies and activities carried out during 1994 and the first half of 1995.

Part I

RELEVANT ACTIVITIES AND STUDIES OF INTERNATIONAL ORGANIZATIONS

1. UNCTAD

1.1 Commodities Division

3. In fulfilling its main role of strengthening international co-operation on commodities, UNCTAD's main activities in the field of ferrous minerals and metals have been linked to the work of the **Intergovernmental Group of Experts on Iron Ore (IGEIO)**. The IGEIO is a forum set-up within UNCTAD which provides for a regular producer-consumer dialogue on iron ore matters. Since 1986, the Expert Group has been active in improving market transparency, reviewing and monitoring the market situation and outlook for iron ore, and facilitating closer co-operation through regular exchanges of views and information on issues of concern to the iron ore industry worldwide. Functioning as the only study-group type of forum exclusively devoted to iron ore, the IGEIO has been attracting at its annual sessions experts who are policy-makers in government and industry from about forty countries representing producers, consumers, traders, and relevant international organizations. Participation in the IGEIO' sessions is open to representatives from all UNCTAD member countries and the participation of industry is highly encouraged. The annual sessions of the Expert Group are held for three days, normally in October at the Palais des Nation in Geneva.

1.1.1 Review of the current market situation and outlook for iron ore - 1995
TD/B/CN.1/IRON ORE/17, Geneva, July 1995
For general distribution. Issued in the six United Nations official languages (Arabic, Chinese, English, French, Russian and Spanish).

4. This report describes world iron ore market developments which took place in 1994 and the first half of 1995. It is mainly intended as a background document to stimulate the annual discussions among iron ore producers and consumers involved in the work of UNCTAD's Intergovernmental Group of Experts on Iron Ore. Featured are recent developments influencing demand for iron ore such as the world iron and steel production, the ferrous metallics market and iron ore stock movements. The supply capacity at the regional and global levels, as well as the financing and investments plans of the iron ore mining industry, are also dealt with. The report examines international trade issues relating to the volume and value of international trade, prices, freight rates and transportation costs for iron ore. Technological and environmental issues are also addressed, as well as the short-term outlook for the iron ore market.

1.1.2 Annotated bibliography on iron ore - 1995
TD/B/CN.1/IRON ORE/18, Geneva, July 1995
For general distribution, in all United Nations official languages.

5. The present bibliography has been issued annually since 1989 for submission to the annual sessions of the UNCTAD's Intergovernmental Group of Experts on Iron Ore. Its main purpose is to share information among the iron ore community as regards relevant studies and activities currently undertaken worldwide by international institutions and in individual countries on iron ore issues. It provides summaries of major technical and economic conclusions of specific studies and activities in the field of iron ore. A directory containing the addresses of relevant organizations is also included, with a view to facilitating the acquisition or further details concerning the publications and/or events listed.

1.1.3 Environmental legislation for the mining and metal industries in Asia
UNCTAD/COM/40, Geneva, 1994
For general distribution, in English only.

6. This report gives an overview of government regulations concerning environmental management in the mining and metals industries of India, Indonesia, Malaysia, Papua New Guinea, Philippines, Thailand and Viet Nam.

1.1.4 State participation and privatization in the minerals sector
TD/B/CN.1/GE.2/2, Geneva, August 1995
For general distribution, in all United Nations official languages

7. This report examines the main issues which arise with regard both to State participation in, and privatization of (non-fuel) mineral sector activities. It also reviews the major events which have occurred in this sector over the period 1993-95.

1.2 Division for Data Management

1.2.1 Iron ore statistics 1987-1994
TD/B/CN.1/IRON ORE/17, Geneva, July 1995
For general distribution in all United Nations official languages.

8. This compendium is issued under the UNCTAD regular statistical programme on minerals and metals. This publication has appeared annually since 1984, and provides detailed iron ore statistics to complement the annual market review. The world statistical series cover the last 8 years and is based on the replies received from governments to the UNCTAD annual questionnaire on iron ore. It has 28 tables and includes data for production, consumption and trade of iron ore and ferrous metallics, as well as crude steel production.

1.2.2 Trust fund project on iron ore information.

9. Following the suspension of activities of the Association of Iron Ore Exporting Countries (APEF) as of 1 June 1989, the Governments of certain countries decided to establish a trust fund project on iron ore information administrated by UNCTAD. The purpose was to continue the collection and dissemination of data relating to iron ore mostly based on industry sources, formerly undertaken by APEF. This project is financed by voluntary contributions from the Governments of Australia, Canada, India, Japan, United States, Venezuela and the European Commission, as well as by the revenues from the sales of publications. The future of this project is decided upon every year depending on the total amount of contributions. The following publications were issued under this project:

- Iron Ore Statistics
This is a tri-lingual publication (English, French and Spanish), issued bi-annually in July and November since 1989.

- Market Report on Iron Ore
Published in English only, issued annually in March since 1990.

1.2.3 Monthly Commodity Price Bulletin
Annual subscription 03600P - (ISSN 0251-6438)

10. This monthly publication is available for annual subscription, which also covers the occasional publication of a supplement. The explanatory notes, descriptions and sources are published in English, French and Spanish. The bulletin contains historical series of monthly, quarterly and annual average prices for the current and past three years for all major commodities including minerals, ores and metals, of which iron ore.

1.2.4 UNCTAD Commodity Yearbook - 1994
TD/B/CN.1/STAT/1, Sales No. E/F.93.II.D.8, Geneva, 1994
Bi-lingual publication : English/French

11. This annual publication provides desegregated data at the world, regional and country levels for trade and consumption in selected agricultural primary commodities and minerals, ores and metals including iron ore. Basic tables are presented from both the commodity and the country point of view, to serve as background material to international commodity discussions and negotiations in

UNCTAD, as well as to be of practical use to governments, international organizations, universities and other research institutions with an interest in international commodity policy issues.

1.3 Services Division : Shipping

12. The UNCTAD's Standing Committee on Developing Services Sectors was established with a view to fostering competitive services sectors in developing countries. Shipping remains a priority area. A number of activities inciuding specialized reports, technical assistance projects and training programmes, in the fields of shipping, ports, maritime legislation and multimodal transport are carried out and certainly are of interest to those involved in the seaborne trade of iron ore. A selection of the most recent publications includes:

1.3.1 Review of maritime transport 1993
TD/B/CN.4/37, Sales No. E.94.II.D.30, Geneva, 1994
Available in all six official languages.

13. This annual report identifies the main developments in world maritime transport, providing relevant analytical and statistical data. It examines major changes in the world fleet, shipbuilding, freight markets, and multimodal transport. It includes an overview of the demand for global shipping services and developments in international seaborne trade. Emphasis is given to the development of the merchant marines in developing countries as compared with other groups of countries. The report also highlights the continued disparity between developing country cargo generation and fleet ownership.

1.3.2 Changes in national practices covering shipper/ocean carrier relations
UNCTAD/SDD/SHIP/2, Geneva 1995
Available in English, French, Spanish and Arabic

14. This report presents an overview of changes in national practices covering shipper/ocean carrier relations, and changes in shipper requirements regarding the quality and conditions of shipping and port services. It presents examples of actual and specific problems faced by shippers and of the way existing institutions are trying to cope with new developments. It shows the divergences and similarities in the approaches applied to finding solutions to the transport problems facing the sippers' community.

1.3.3 Technical cooperation and human resource development in shipping, ports and multimodal transport
TD/B/CN.4/47, Geneva 1995
Issued in all six official languages.

15. This document describes the technical cooperation and human resource development activities undertaken by UNCTAD in the area of shipping, ports and multimodal transport. Its purpose is to draw some lessons from the practical experience gained from working in this field which could help improve the effectiveness of these activities in the future.

1.3.4 Fostering competitive multimodal transport services
TD/B/CN.4/46, Geneva, 1995
Issued in all six official languages.

16. As the links between maritime transport, port facilities and land transport have been multiplied by the growing use of containers and multimodal transport (MT) services, the scope of competence of UNCTAD has been expanded to embrace the entire spectrum of new developments in this sector. The effect of liberalization of services and increased competitiveness, the evolution of MT operations into physical distribution, multimodal logistics and total transport services, as well as the increasing need for consideration of environmental, safety and quality of services issues, are at the cutting edge of mode

2. OTHER UNITED NATIONS ORGANIZATIONS OR SPECIALIZED AGENCIES

2.1 **Economic Commission for Africa (ECA)**

17. In 1994, the UN-ECA has not undertaken any particular study on iron ore or related issues. Nevertheless, the ECA is assisting the Government of Congo to make an assessment concerning the possibilities to exploit the Zanaga iron ore reserves. The idea is to find out whether it would be feasible to develop this mine and set-up an integrated iron and steel plant in Niari.

2.2 **Economic Commission for Europe (ECE)**

18. The United Nations Economic Commission for Europe organizes annual meetings, seminars, study tours and undertakes studies in the field of iron and steel, as part of the activities of its Working Party on Steel. Its main studies and activities in 1994 and so far in 1995 were:

2.2.1 The steel market in 1993 and prospects for 1994
ECE/STEEL/85, Sales No. E.94.II.E.28, Geneva, 1994
Available in English, French and Russian.

19. This annual report has been published since 1953. In 1994, its format has been changed with a view to improving its scope and to ensure the earliest possible availability of information on national and international trends in the steel market, in the iron and steel industry and in its raw material supply situation. It focus on past developments and prospects for the steel market in market economy countries as well as in the European transition countries.

2.2.2 Structural changes in consumption and trade in steel
ECE/STEEL/88, Sales No. E.94.II.E.42, Geneva, 1994
Available in English, French and Russian

20. This study identifies and explains important changes and their consequences for consumption and trade in steel from 1980 to 1993. It provides an overview

and analysis of the relationship between steel consumption, production and trade. It also examines the effect of structural changes and technological innovation for the world steel industry. A chapter is dedicated to international trade in steel products and presents detailed data as regards the structure of steel exports, imports and trade balances of regions and countries.

2.2.3 Other ECE activities

21. Following the Meeting of Experts on the Steel Industry and the Environment held in 1994, the UN-ECE has been very active in this field. A seminar on "Steel Industry and Recycling" was held in April 1995 in Dusseldorf Germany, to address issues related to the role of recycling in the steel industry. Another seminar on "Processing, Utilization and Disposal of Waste in the Steel Industry" is schedule to take place in June 1996 in Hungary.

22. With a view to promote the process of economic reforms in the countries in transition, the UN-ECE organized a "Workshop on the restructuring of the iron and steel industry of Ukraine" which was held in December 1994 to discuss possibilities and opportunities for the Ukrainian steel sector.

23. At the invitation of the Government of the Russian Federation, the UN-ECE jointly with the Russian Federation Committee of Metallurgy is organizing a "Study tour of the Russian iron and steel industry". The tour is to be viewed in the context of the changes which have occurred in the Russian steel industry during recent years. It will take place from 17 to 23 September 1995.

2.3 **Economic Commission for Latin America and the Caribbean (ECLAC)**

24. During 1994, the UN-ECLAC had not carried out any study on iron ore or related matters. ECLAC focused its attention on industrial restructuring in Latin America at a global level. Nevertheless, ECLAC maintains close collaboration with ILAFA (Latin American Iron and Steel Institute) whose headquarters are also located in Santiago, Chile, with a view to following regional developments in this field.

2.4 **Economic and Social Commission for Asia and the Pacific (ESCAP)**

25. In 1994 ESCAP has not undertaken any specific studies or activities on iron ore. However, since 1984, ESCAP has been issuing a series of recurrent publications entitled "Atlas of Mineral Resources of the ESCAP Region". These Atlases provide, inter alia, relevant information and data on iron ore deposits in a form of either short overview of the major iron ore deposits or detailed description of their geology, tectonic setting and status of their development in support of mineral-based industry. As of today, ten individual country volumes have been produced within this series covering chronologically the following countries: Malaysia, Solomon Islands, the Republic of Korea, New Zealand, Sri Lanka, Viet Nam, Lao PDR, Bhutan, Nepal and Cambodia. Two additional volumes are envisaged to be produced in the course of 1995 which will cover Afghanistan and Myanmar, and which will also contain specific sections on iron ore deposits and status of their mineral exploration and development.

2.5 United Nations Economic and Social Commission for Western Asia (ESCWA)

26. The ESCWA has not published any studies or reports on iron ore or relevant to iron and steel industry during 1994. However, ESCWA Regional Advisors on Industry and Science & Technology continue to provide technical and advisory assistance to develop the existing industries in the region, including the iron and steel industry in the member states.

2.6 United Nations Division for Environmental Management and Social Development, New York

27. This Division has not conducted recent studies on iron ore. Nevertheless, a publication entitled "Chronicle of the United Nations Mineral Resources Exploration in Developing Countries 1958-1993" was issued in 1994. As the United Nations has been conducting mineral surveys in developing countries for more than 30 years and has executed more than 400 mineral projects worldwide, this report provides basic geological information that investors can use to identify mineral targets for further exploration and development.

2.7 United Nations Environment Programme - (UNEP)

28. UNEP's Industry and Environmental Programme Activity Center (UNEP IE) was established in 1975 in Paris to bring industry, governments and non-governmental organizations together to work towards environmentally sound forms of industrial development. To achieve this goal, UNEP IE provides access to practical information and develops cooperative on-site actions. To promote transfer of information and sharing of experiences, it has developed various activities such as the preparation of technical reviews and guidelines, training activities, query response service, computerized clearinghouse etc.

29. UNEP IE has long placed high priority on the iron and steel industry. A number of publications covering the environmental aspects of the steel industry have been enthusiastically received by those involved in industrial environmental management in this sector worldwide. In addition, a series of seminars and workshops, and occasionally arranged technical co-operation on the subject. Past publications have been listed in previous versions of this bibliography. The most recent document is the "Company Environmental Reporting" (UNEP IE Technical Report No.24) issued in 1994.

30. UNEP IE is currently setting up an in-house database on countries' environmental standards and guidelines for industrial discharges. Since the collected information will also be published as sectorial monographs, the draft volume covering the iron and steel sector is now distributed to relevant experts worldwide for comments.

2.8 United Nations Development Programme (UNDP)

31. UNDP has not issued any particular publication on iron ore mining or in the iron and steel field in 1994. However, UNDP continues to finance several projects related to the development of iron ore mining and the iron and steel

industry in a number of developing countries, as well as in the countries in transition of Eastern Europe.

2.9 **United Nations Industrial Development Organization (UNIDO)**

32. No studies or activities dealing specifically with iron ore were undertaken by UNIDO in 1994. Traditionally its activities relate to the elaboration and adaptation of technologies for processing of locally available metallurgical minerals or ores; assistance in the establishment, management and operation of new mines and plants; provision of expertise for rehabilitation, restructuring, modernization and efficient operation of existing plants; application of appropriate technologies and equipment, including technological consulting, product development, and introduction of managed and computerized systems; improvement of product-mix, harmonized to the national, regional and international demand; consulting on management and cost accounting of metallurgical and metal transformation plants; and energy conservation and environmental considerations.

2.10 **International Trade Center UNCTAD/WTO (ITC)**

33. ITC's present programmes do not include any specific activity related to iron ore.

2.11 **International Labour Organization (ILO)**

34. In 1994 no specific activity related to iron ore was carried out by this organization. ILO continue to carry out a number of activities related to various economic, social and labour problems in the iron and steel industry following requests made by its Iron and Steel Committee. As a traditional and priority area of activity, ILO is continuing its work on collection, analysis and dissemination of worldwide statistical information on employment, hours of work, and wages in a number of sectors including mining and the iron and steel industry. This information is published annually in the Year Book of Labour Statistics.

3. OTHER INTERNATIONAL ORGANIZATIONS

3.1 **World Bank**

35. The most recent publications by the World Bank relating to iron ore, iron and steel were the following:

3.1.2 Commodity markets and the developing countries
December 1994/ March 1995. Publication for sale.

36. This quarterly review discusses recent developments in 34 primary commodity markets including iron ore and steel, and their likely impact on prices. Featured are production, consumption, and trade patterns to pinpoint why some commodities may thrive while others may falter. Each issue provides succinct, yet substantive, assessments on the current market climate for raw materials.

3.2 World Trade Organization (WTO)

37. The WTO has not carried out particular studies or other activities in the field of iron ore and iron and steel.

3.3 Organization for Economic Cooperation and Development (OECD)

38. The most recent OECD's publications in the field of iron and steel and related steelmaking materials were:

3.3.1 The Steel Market in 1994 and Outlook for 1995 and 1996
Sales No. ISBN 92-64-14288-6, Paris, 1995
Available in English and French.

39. This report provides an analysis of the steel market, pointing out the main features and market developments in 1994, as well as the outlook for 1995 and 1996. It covers overall aspects related to steel supply, demand, trade and capacity, as well as developments in the steel market by area for both OECD and non-OECD countries. It also contains brief analyses and data on employment in the steel industry for the OECD countries.

3.3.2 The Iron and Steel Industry in 1993
Sales No. ISBN 92-64-04367-5, Paris, 1995
Bilingual publication in English and French.

40. This annual publication is a statistical compendium presenting trends in the iron and steel industry in 1993 for OECD countries, including Mexico, which joined the Organization in 1994, and for the Republic of Korea. The publication contains 30 statistical tables showing steel production, consumption and trade, as well as other indicators of activity such as employment levels, investment expenditures by sector and by country, export prices and domestic prices. Information for certain iron and steel products and related steelmaking raw materials such as iron ore, manganese ore, coke and ferrous scrap, is also provided.

3.3.3 "The steel industry in transition: Financial and privatization issues"
OECD Working Papers, Volume II, number 77, Paris 1994
Available in English and French

41. This document is a synthesis report on a seminar. It provides an overview and analysis of the major issues addressed at an October 1993 seminar on steel organized by the OECD with the Central and Eastern countries and the New Independent States of the former USSR. These issues include the cost and financing of steel industry adjustment programmes in the OECD and non-Member areas and the issues to be addressed in privatizing steel facilities.

3.4 European Commission (EC)

42. The Commission for the European Union did not publish any specific study on iron ore in 1994. However, the EU's programme for steel for the first half of 1995 briefly reviews market developments for the steel-related raw materials among them iron ore, coke and scrap.

43. The statistical office for the European Union, EUROSTAT, located in Luxembourg, publishes regularly detailed statistical information on iron and steel for its member countries. The publications are multi-language (seven languages) and can be purchased or obtained through subscription.

3.4.1 Iron and Steel Yearbook - 1994

44. This publication provides yearly statistics on the structure and the economic situation of the EU's iron and steel industry. It includes data on employment, size of enterprises, plants, crude steel, iron and scrap balances, production of iron ore, pig iron, crude steel and finished steel and products, consumption of raw materials, external trade in scrap, etc.

3.4.2 Iron and Steel Monthly - with Quarterly Supplement

45. This publication presents the European Coal and Steel Community (ECSC) steel situation at a glance, including a monthly index of production of the Community's iron and steel industry, pig iron production, production and trade of steel products, as well as consumption and receipts of scrap.

3.5 Common Fund for Commodities (CFC)

46. The Common Fund for Commodities started its operations as an international financial institution in 1989. It has a membership of 105 States plus the European Union. Under its second account, the Fund may make loans and grants for the financing of development measures in the field of commodities aimed at improving the structural conditions in markets and at enhancing the long-term competitiveness and prospects of particular commodities. One of its unique features is that it finances projects sponsored by International Commodity Bodies (ICBs) which are commodity-focused rather than country-focused.

47. Its Annual Report presents a general economic assessment of the ore minerals sector, but the Common Fund has never carried out any study or project related to iron ore and/or steel, for the reason that to-date, no International commodity Board (ICB) in this commodity sector has applied for designation to the Fund.

3.6 International Iron and Steel Institute (IISI)

48. The IISI is a non-governmental, non-profit research organization dealing with various aspects of the international steel industry, including its raw materials. IISI work is carried out through seven standing committees. More

related to iron ore is the Committee on Raw Materials which has a membership composed of companies from 21 steel-producing countries.

49. In 1995, the annual session of the Committee was held in South Africa. The meeting was followed by plant, port and mine visits. It discussed the short range outlook for the supply and demand of iron ore and steelmaking raw materials. It approved for publication the study on "The World Market for Iron Ore" which covers present and future (to the year 2005) supply and demand for iron ore.

50. A study has been started on "Scrap and the Steel Industry" which will investigate the present and future availabilities and requirements of scrap, including of alternative metallic inputs like DRI or granulated pig iron. Special emphasis is to be placed on the economic and metallurgical aspects of preparing and using recycled steel products. Also inscribed in the work programme is a study on "Coke and its Alternatives" which is to examine the volume, state and age of coke-making capacities, together with the use of other fuels than coke in ironmaking.

3.7 Latin American Iron and Steel Institute (ILAFA)

51. ILAFA remains the main institution to promote the iron and steel industry of Latin America. Among its activities a major event is the Annual Congress of the Latin American Iron and Steel Industry. In 1994, the Congress was held in Santiago, Chile and in 1995 it will take place from 17-20 September in Cartagena de Indias, Colombia.

52. ILAFA also organizes technical seminars, undertakes studies and publishes regularly detailed statistics on the Latin American iron ore, iron and steel industry. In addition to Siderurgia Latinoamericana, its monthly technical review, ILAFA's most recent publications were:

3.7.1 The Latin American iron and steel industry in 1993/94 and its prospects
ILAFA, Santiago, 1994 Bilingual: Spanish and English

53. This annual study analyses the main world economic developments as well as the economic situation in each Latin American country, and its linkage with the regional iron and steel industry and factors influencing the production, trade, investments and the overall world steel market situation.

3.7.2 Statistical yearbook of steelmaking and iron ore mining in Latin America - 1993 ILAFA, Santiago, 1995 Bilingual: Spanish and English

54. This annual publication is also available on diskettes. The latest edition presents statistical series for the period 1989-1993 for Latin American countries on production, consumption, imports, exports and prices of steel and raw materials. It also provides data on employment and investments made by the Latin American iron and steel industry.

3.7.3 The Latin American Iron and Steel Directory - 1993
ILAFA, Santiago, 1994 Bilingual: Spanish and English

55. This is the 10th edition of this useful publication which contains updating information and the list of companies, names of directors and member of Executive Boards, kind of products and services offered by the iron and steel industry in Latin America, including the iron ore and coal mining industries, ferro-alloys, equipment suppliers, traders and institutions dealing with iron and steel issues.

3.8 **South-East Asia Iron and Steel Institute (SEASI)**

56. SEASI is a professional technical institute representing the iron and steel industries in South East Asia. It was created in 1971 under the auspices of the United Nations Economic Commission for Asia and the Far East. SEASI organizes conferences, seminars and study tours in the region and also provides information and services to its members. It publishes monthly newsletters, quarterly journals, and an annual directory. The proceedings and technical papers presented at conferences and seminars are also usually published.

57. In 1995, the SEASI Annual Conference was held in May in Penang, Malaysia and focused on "Recent Development of Rolling and Following Process Technology and/or Application of Steel Products". SEASI 1995 seminar will take place in Singapore from 6-7 November 1995, and its main topic will be "Cost saving through the improvement of operation technology for long products".

3.8.1 SEASI Steel Statistical Yearbook - 1993
SEASI, Manilla, October 1994

58. This publication appears now for the third consecutive year. It presents detailed statistics for the period 1991-93 on steel production, consumption, and trade by products for the SEASI's ten member countries.

3.9 **Arab Iron and Steel Union (AISU)**

59. AISU's main objective is to facilitate close and effective cooperation between its member countries with a view to furthering the development of the iron and steel industry in the Arab countries. To this end, AISU organizes congresses and seminars on technical steel issues. AISU publishes a monthly review, Arab Steel, with technical papers from the various seminars and other relevant articles. Its documentation center also issues a monthly Steel information service, summarizing world steel news for its members.

60. For this year, AISU is organizing an international symposium on "Prospects for Future Developments of Steel Mini-Mills". The event will take place from October 23-25 in Damascus, Syrian Arab Republic. It will focus on the present situation of steel mini=mills, their role in the future, as well as their impact on iron and steel projects and, finally the obtained results in comparison to the integrated steel plants.

3.9.1 Arab Iron & Steel Statistics

61. This handful statistical publication was issued for the first time in 1994. Detailed statistics are presented for the Arab countries for the period 1989-1993. It provides data for production, consumption and trade for iron ore, pellets, sponge iron and steel.

3.10 **Arab Industrial Development and Mining Organization - (AIDMO)**

62. This organization has a new structure resulting from the merging of the former Arab Industrial Development Organization (AIDO), the Arab Organization for Standardization and Methodology (ASMO), and the Arab Organization for Mineral Resources (AOMR).

63. In 1994, AIDMO's main activity related to iron ore was to monitor, in collaboration with some Arab States, the completion of a pre-feasibility study of a project for the exploitation of iron ore at the Al-Awaj deposit in Mauritania and for the production of pellets from the extracted ores. Practical steps have been taken to start implementation of the second phase of the study (technical and economic feasibility study of the project). The aim of the project is to produce annually 5 Mt of high-grade DR-pellets with a view to meeting the needs of the Arab iron and steel industry. The first phase of the study indicate that the Al-Awaj deposit has reserves of magnetite ores sufficient for 20 years of open-mining extraction at a rate of about 12 Mt per year.

3.11 **African Iron and Steel Association (AISA)**

64. The African Iron and Steel Association, set-up in 1991, is expected to contribute to the implementation of the "Industrial Decade for Development in Africa" and the "Priority Programme for African Economic Revival" guided by the Lagos plan of action. Its membership is composed of government and industry representatives from Algeria, Angola, Congo, Ethiopia, Ghana, Mali, Mauritania, Nigeria, Senegal, Togo, Tunisia, Zambia and Zimbabwe. The headquarters of AISA is in Nigeria, where the first General Assembly held in 1992 elected its Secretary-General.

3.12 **American Iron Ore Association (AIOA)**

65. This Association, which represents the iron ore industry of Canada and the United States, does not publish studies or articles on iron ore. However, the AIOA issues a comprehensive collection of detailed iron ore statistics of the iron ore industry in Canada and the United States. The most recent issue in this series is: Iron Ore 1994, published in May 1995.

Part II

RELEVANT STUDIES AND PUBLICATIONS COMMUNICATED BY GOVERNMENTS

Bolivia

66. The Government of Bolivia provided a copy of the study carried out by ALADI (Asociacion Latinoamericana de Integracion) in 1994, on a proposal for a joint-project for the Formulation of an Iron and Steel Complex for Bolivia and Uruguay. This proposal has been put forward under a special program to assist the countries with less advanced economic development in the region, with a view to promote the complementarily and integration of the iron and steel sector. Two options are being considered; first, to build-up a DRI plant in Nueva Palmira, Uruguay which will use Bolivian gas and ores extracted at Mutum; or to produce DRI in Bolivia near the Mutum's deposits and produce ordinary and special steels in Nueva Palmira.

67. Regarding the development of the El Mutun iron ore deposits, a study was undertaken by Corporation Minera de Bolivia. In 1992 the Empresa Minera de Mutum was created to prepare the conditions for the exploitation, concentration and commercialization of Mutum ores.

Canada

68. From Natural Resources of Canada, the UNCTAD secretariat has received two relevant publications in 1995:

Canadian Mines: Perspective from 1994 (MR 238)

69. This report presents an assessment of the future supply capability from resources in the ground for some of the major mineral commodities produced in Canada. Its purpose is to determine whether resources are being developed for production at rates sufficient to maintain Canada's position as a major supplier of mineral commodities.

Mining and Mineral Processing Operations in Canada (MR 239)

70. This report is a compilation of information relating to mines and processing facilities in Canada. It lists significant information concerning Metal Mines and Processing Plants, including the name of the operator, location of mines, plant capacity, processes, products and other details of special interest.

Congo

71. The Ministry of Industrial Development, Energy and Mines of Congo, has informed that any study was carried out about iron ore mining, neither related to the development of the iron and steel sector in this country since 1984.

Madagascar

72. The Government of Madagascar informed that until now iron ore has never been exploited in this country. Any particular study was undertaken concerning the iron ore reserves in Madagascar in 1994/95. The most important iron ore deposits are located at Soalala (Mahajanga). A pre-feasilibity study about this deposit was carried out during the 1988-90 period, but no other decision has been taken.

Morocco

73. The Government of Morocco provided a statistical document containing detailed data for trade of iron ore and iron and steel products in this country for the years of 1993 and 1994.

Mexico

74. The Instituto Nacional de Estadistica, Geografia e Informatica of Mexico sent to the UNCTAD secretariat, the publication Canacero - Ten years of iron and steel statistics. It provides statistical data and several indicators pertinent to the Mexican iron and steel industry for the period 1984-1993.

Thailand

75. The Department of Mineral Resources of Thailand reported on the latest developments regarding the iron and steel industry in the country. Thailand is only a small iron ore producer because no large iron ore deposits have been found. Due to the shortage of scrap and the rising demand for high quality metallics, direct reduction technology has been introduced to the steel industry during the past 3 years but for economic reasons decisions concerning the construction of DRI plants have not been taken. Apparent steel consumption exceeded 4 Mt in 1994, and production of semi-finished steel products amounted to 1.5 Mt. Demand for steel tends to increase substantially in the future due to the growth of the country's economy.

Venezuela

76. The Ministry of Energy and Mines of Venezuela provided information concerning the venue of the "IX Latin American Congress of Geology", which will take place in Caracas, Venezuela from 5 to 8 November 1995. This scientific event will not only provide a forum for discussions regarding the current geological and mining activities in Latin America and the Caribbean, but it will also promote technic-cooperation projects with North American and European geological researchers.

Part III

SUMMARIES ON SPECIFIC TOPICS

A. Iron ore mining capacity and export capabilities

77. The study published in June 1995 by the International Iron and Steel Institute, "**The World Market for Iron Ore**" investigates trends in supply of and demand for iron ore over the period to the year 2005. The assessment of future trends for iron ore demand is based on the steel demand forecasts made by the IISI in October 1994. The analysis of future supply is based on a questionnaire sent to the world's principal iron ore mining companies.

78. It concludes that total iron ore production capabilities are likely to rise to 975 Mt in the year 2000 (5.5% higher than in 1993), and a further increase will bring production capabilities to 982 Mt by 2005. The bulk of expansion will consist of fines which will account for 38% of total supply in 2005 compared with 32% in 1993.

79. It foresees that world iron ore requirements could reach 950 MT in 2005, but the needs of iron ore between 1995 and the year 2000 would increase at the relatively modest rate from about 855 Mt in 1995 to 880 Mt in the year 2000.

Table 1 : Iron Ore Export Capability, by Type of Product
(million metric tons, saleable product, natural moisture)

PRODUCT TYPES	1995	2000	2005
Fines	224	250	252
Concentrates/Pellet Feed	78	76	76
Lump Ore	76	83	83
Pellets	63	67	66
TOTAL ALL PRODUCTS	440	476	477

Source: International Iron and Steel Institute, 1995

B. State participation and privatization in the minerals sector

80. The process of privatization has been an important aspect of economic reform worldwide, especially in developing countries and countries in transition to a market economy. In recognition of this importance, and because various issues of privatization are specific to the mineral sector, an **Ad Hoc Group of Experts on State Participation and Privatization in the Minerals Sector** will meet under UNCTAD auspices, to consider various aspects such as (i) the rationale for State participation and for privatization; (ii) the conditions and requirements

for privatization, policies used to achieve and sustain the privatization process, and problems encountered; and (iii) appropriate roles for the public sector, the private sector and the international community in this domain.

81. Participants will include a number of invited experts from countries with a significant mineral sector with national or international experience in policy-making related to the organization of the mineral industry. This Group, will meet in Geneva from 26-27 October 1995, immediately after the annual session of the **Intergovernmental Group of Experts on Iron Ore**.

ANNEX

DIRECTORY OF RELEVANT INTERNATIONAL ORGANIZATIONS

For inquiries and acquisition of the publications listed in this bibliography, please contact directly the appropriate organization:

* UNCTAD
Palais des Nations
1211 Geneva 10
Switzerland
Tel: (4122)9071234/9171234
Telex: 412962 - UNATIONS
Fax: (4122) 907-0057

* UN ECONOMIC COMMISSION FOR EUROPE - ECE
Palais des Nations
1211 Geneva 10
Switzerland
Tel: (4122)9071234/9171234
Telex: 412962 - UNATIONS
Fax: (4122) 917-0123

* UN ECONOMIC COMMISSION FOR AFRICA - ECA
Africa Hall - P.O. Box 3001
Addis Ababa
Ethiopia
Tel: 447000/447200
Cable: ECA, Addis Ababa
Fax: (2511) 514416

* UN ECONOMIC COMMISSION FOR ASIA AND THE PACIFIC - ESCAP
The United Nations Building
Rajadamnern Av.
Bangkok 10200
Thailand
Tel: 2829161-200
2829381-389
Telex: 82392 ESCAP
Cable: ESCAP

* UN ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN - ECLAC
Casilla 79 D
Santiago
Chile
Tel: 48-5051
Telex: 340295/441054
Cable: UNATIONS

* UNITED NATIONS
Division for Sustainable Development
United Nations
N.Y. 10017
U.S.A.
Tel: 212-963-8792
Cable: UNATIONS, NEW YORK
Fax: (212) 963-4340

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* United Nations publications may be obtained from bookstores and distributors throughout the world. Consult your bookstore or write to: United Nations, Sales or Distribution Section, New York or Geneva.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION - UNIDO
Vienna International Center
P.O. Box 300
A-1400, Vienna
Austria
Tel: 211-310
Telex:135612
Fax: 232156

INTERNATIONAL LABOUR OFFICE - ILO
4, route des Morillons
CH-1211 Geneva 22
Switzerland
Tel: 22-7996111
Telex: 415647
Fax: 22-798-8685

THE WORLD BANK
1818 H Street, N.W.
Washington, DC 20433
U.S.A.
Tel: 202-477-1234
Telex: WUI 64145
Fax: 202-477-6391

WORLD TRADE ORGANIZATION - WTO
Center William Rappard
1211 Geneva 21
Switzerland
Tel: 739-5111
Telex: 412324 GATT
Fax: 022-7314206

ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT- OECD
2, rue André-Pascal
75775 Paris Cedex 16
France
Tel: 45.248200
Telex: 620160
Fax: (33-1) 45248500

EUROPEAN COMMISSION - EC
Rue de la Loi 200
B-1049 Brussels
Belgium
Tel: 295-1111
Telex: B21877 COMEUR
Fax: 296-0916

COMMON FUND FOR COMMODITIES
Willemshuis, Stadhouderskade 55
1072 AB Amsterdam
The Netherlands
Tel: (3120) 66 46409
Telex: 12331 cfc nl
Fax: (3120) 67 60231

INTERNATIONAL IRON & STEEL INSTITUTE - IISI
Rue Col. Bourg, 120
B-1140 Brussels
Belgium
Tel: 735-9075
Telex: 22639
Fax: 735.8012

LATIN AMERICA IRON & STEEL INSTITUTE - ILAFA
Casilla 16065
Santiago 9
Chile
Tel: 22.37581
Telex: 340348
Fax: (56-2)2253111

SOUTH EAST ASIA IRON & STEEL INSTITUTE - SEASI
P.O. Box 7094
40702 Shah Alam
Selanga Darul Ehsan
Malaysia
Tel: (603) 559 1102
Telex:
Fax: (603) 559 1159

ARAB IRON & STEEL UNION - AISU
P.O. Box 4
Cheraga - Algiers
Algeria
Tel: 36-2704/06
Telex: 63158
Fax: 37.1975

AMERICAN IRON ORE ASSOCIATION - AIOA
614 Superior Av. West
915 Rockefeller Building
Cleveland, Ohio 44113-1383
U.S.A.
Tel: (216)241-8261
Fax: (216)241-8262